MEDICAL RECORD

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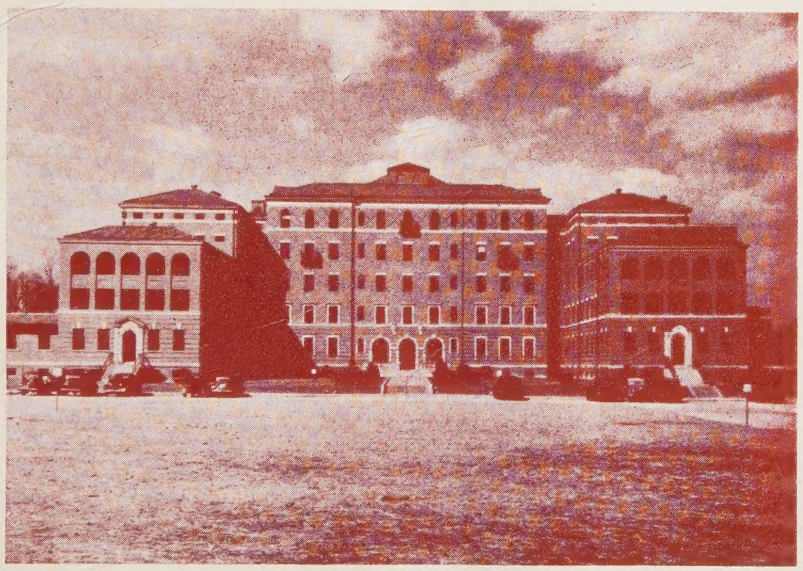

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Symposium on Neuropsychiatry, page 157

March 1943

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Vol. 156, No. 3

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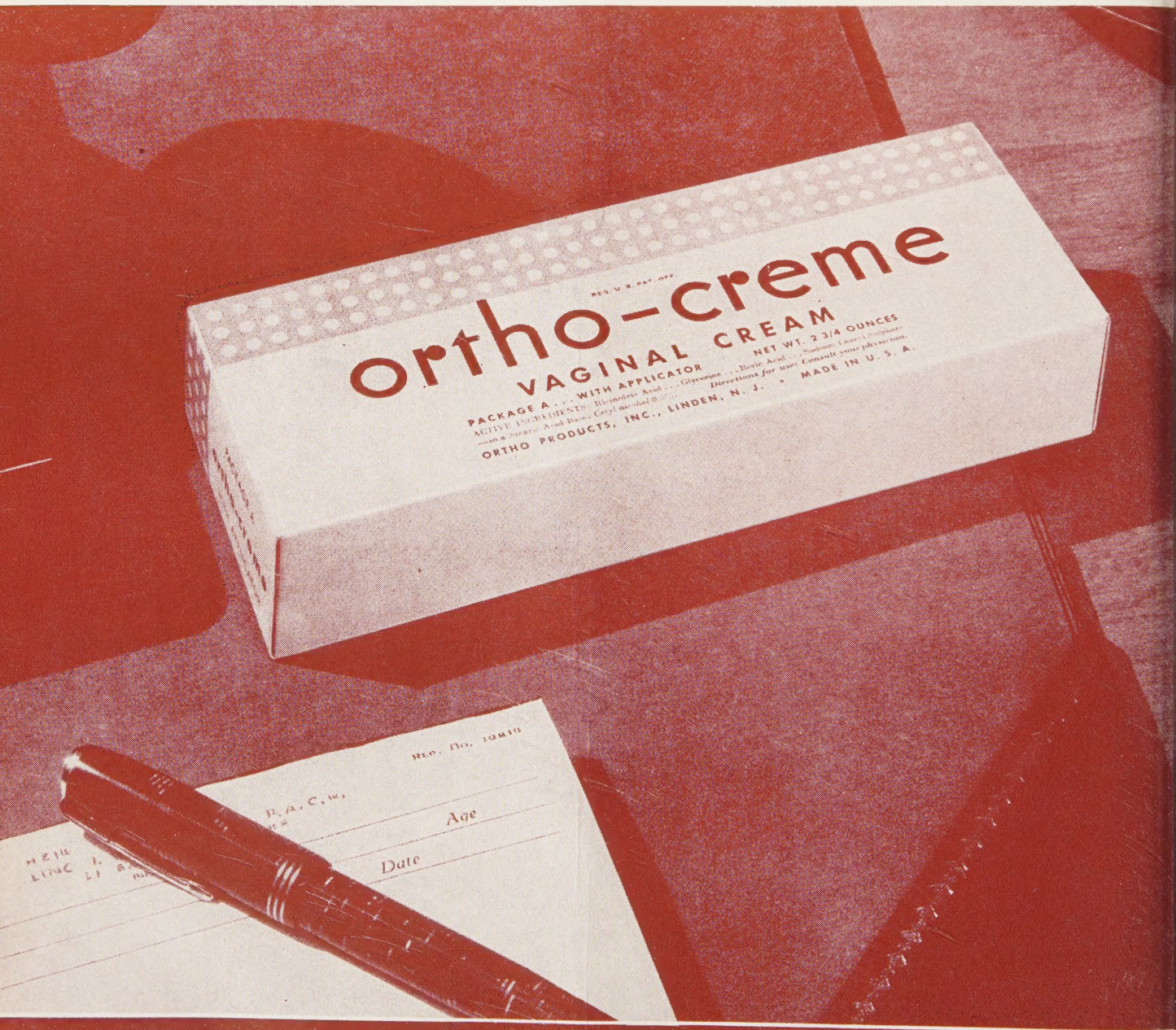

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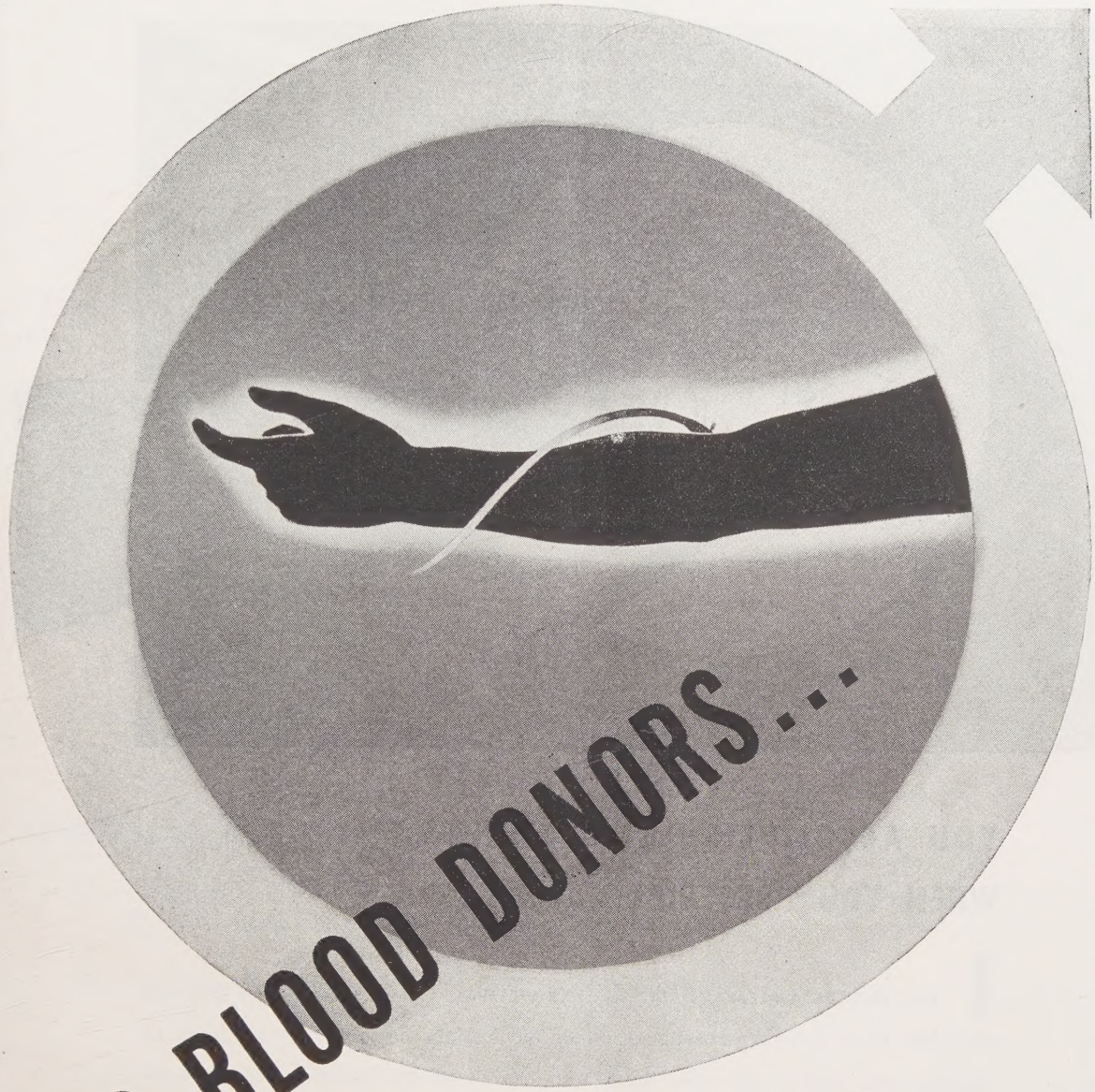

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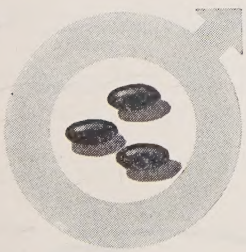

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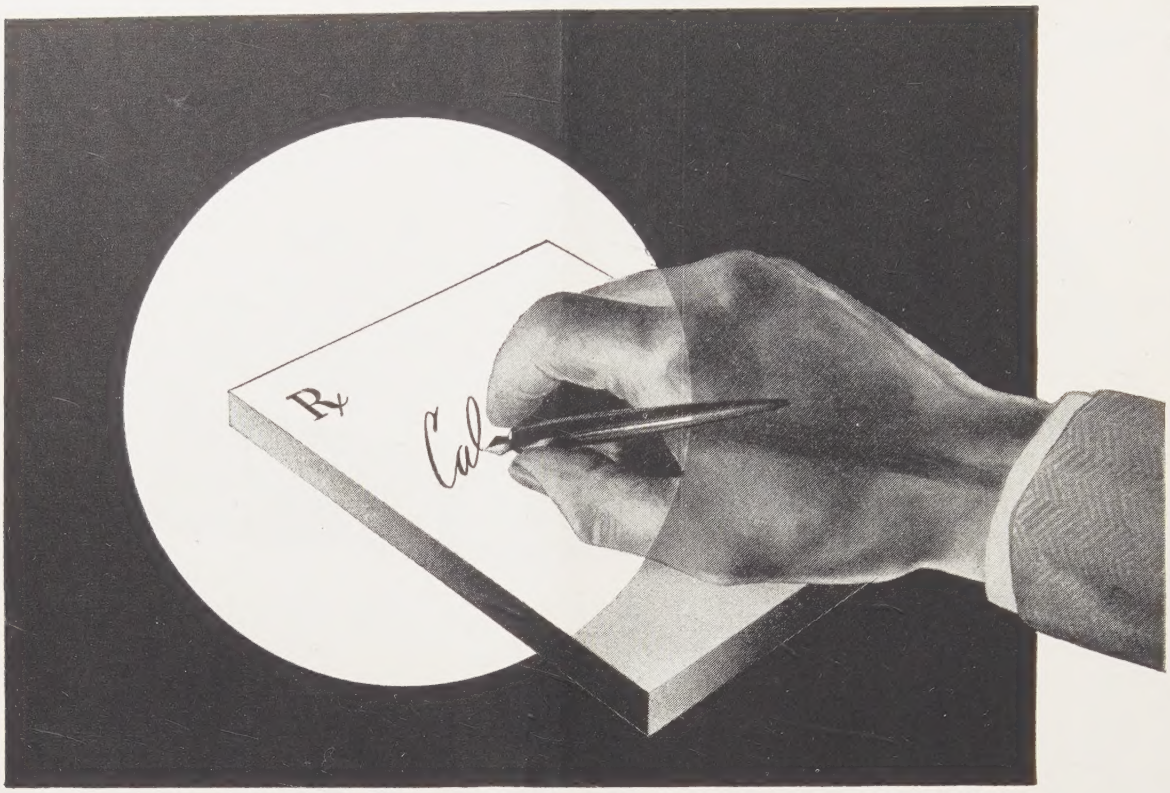

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MARCH 1943

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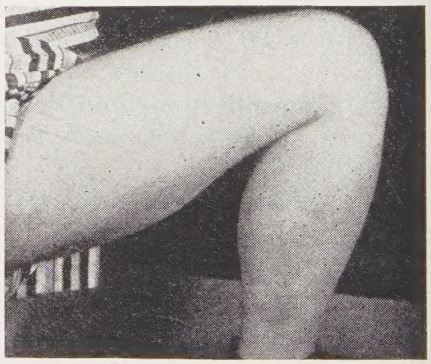

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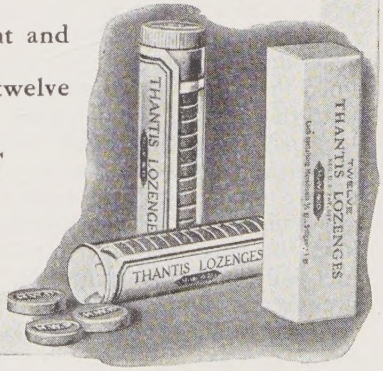

Open Forum

Caudal Anesthesia in Labor

In the last few weeks we have heard a good deal about caudal analgesia in labor. Of all the places in the world the method has originated in the Marine Hospital in Staten Island, New York; and it has for its sponsors Dr. Hingson and Dr. Edwards, officers of the United States Public Health Service. The analgesic used is one of the cocaine series of drugs named metycocaine, or metycaine. An ampule of this cocaine derivative is injected into the caudal region of the spine. Several ampules are used during labor, one about every thirty to forty minutes. The spinal cord is not entered when the injection is made. All cocaine drugs and their derivatives produce a temporary paralysis of the sensory nerve tissue whether it is injected directly into the nerve itself or into the surrounding tissues, or through the ganglionic centres of the spine. It is not necessary to puncture the nerve itself so that a local anesthetic centre is produced when the anesthetic is used at any particular regional location. It also seems evident from experience that this regional centre not only produces an anesthetic effect upon the surrounding tissues but also upon the sensory filaments of the uterus while it scarcely interferes at all with the muscular functions, if indeed it does not temporarily increase muscular energy. Probably this applies to the sympathetic nerves also. The blockage, however, is only temporary and the injection has to be repeated with the return of the pain. Several ampules are used and, after birth takes place, this may be poisonous to the patient. Many people are highly susceptible to the action of cocaine. The procedure, however, seems harmless at the time of birth to both mother and baby but it may be followed next day by manifestations of cocaine poisoning, especially in susceptible persons. It might be worth while to set down some of the poisonous effects of cocaine.

Symptoms of Cocaine Poisoning

In Wood's *Therapeutics,* an excellent account of cocaine poisoning is given in detail. "The mental symptoms of cocaine poisoning are in no way characteristic, but there is marked dreaminess and an inability to attend to the ordinary duties of life, a loss of reliability, promptness, and punctuality, and a varying state of mentality or aberration. Mosso asserts that a small dose, 0.05 to 0.1 gm., increases in man the sensibility of the skin. This is a sort of universal neuralgia of the skin in different parts of the body, which is also recognized as a feeling as if worms were crawling beneath the skin. This is known as Magnan's sign. Bastedo expresses the opinion that cocaine acts upon the corpus striatum and the optic thalamus, and that the drawbacks to its use are, first, its marked tendency to create a habit; second, its delayed elimination and consequent accumulative action, and the danger of poisoning even from a small dose. The drugs allied to cocaine, though differing in some respects, all have the same tendency to produce poisonous effects, especially in highly susceptible persons. A small dose produces at first some mental stimulation loquacity, restlessness and motor activity. A poisonous dose produces nausea, vomiting, dry throat, dilated pupils, quick respirations, rapid heart, raised blood pressure, incoordination, fear of death, and hallucinations."

On account of the varying types that are so frequently affected by the cocaine salts it might be well to weigh carefully the effects on each individual before their use even in birth cases. Most normal births in multipara would do just as well without the use of this anesthetic, but it might be highly useful in first births and in prolonged labor in nervous subjects. It seems to have been proved to be very successful in numerous reported cases, and the *Journal of the American Medical Association* has called the new method a decided advance in obstetrics.

The writer suggested a somewhat similar method in an article published in the MEDICAL RECORD in August 1938, in which he expressed the opinion that a local anesthetic injected into the lower end of the labium would reduce birth pains and prevent the extreme agony that occurs at the passage of the head, particularly in primiparæ. In this article it was also suggested that the injection could be made into the fibers of the os uteri. The results are much similar to that suggested in the caudal method. Indeed it seems as if any suitable injection around these parts is followed by great relief to the sufferer. For this purpose a long needle, such as that used in tonsillar operations, is needed, and the injection is made directly into the fibers of the os. Either method may prove valuable in certain cases of birth, but they must be well chosen cases, since normal labor is always preferable in women who can stand pain, and for physiological reasons as well. Nervous women may be greatly helped by local anesthetics.

The use of local anesthesia seems to do so much good and so little harm that it now supersedes the former method of twilight sleep.

D. B. MCCARTIE, M.D.
Newark, New Jersey

Aids to Efficiency in Industry

There are two main dangers to health and efficiency of munition workers, and they go together. The first is overwork. Efforts to stimulate workers to feverish activity are as futile and even dangerous as the cheers of partisans to encourage a long distance runner to spurting early in the race. The second danger is the sacrifice of ventilation and lighting. It may be remarked that in the past three winters in Britain there was a rise in the incidence of air-borne diseases, ranging from colds to severe forms of disease, due to bad ventilation in homes and shelters, places of work and transport vehicles. As far as working places and shelters are concerned matters in this respect have been remedied to a large extent but homes are still open to suspicion.

Nevertheless, there is one chronic disease, tuberculosis, which is of outstanding importance from this viewpoint and its incidence has naturally risen during war conditions. It goes without saying that tuberculosis is closely connected with social, economic and industrial conditions. In total war these are adversely affected.

Also there is an enormous movement of women, particularly young women, into industry. Some of them enter work with undetected tuberculosis, for the sufficient reason that in the earliest stages there are

(Continued on page 136)

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no symptoms, nor can symptoms be detected by routine medical examination. Others develop the disease at work. Much can be done in the way of prevention by reduction of fatigue and strain, good ventilation, and so on.

Again the problem of providing artificial sun-baths for munition and other workers has for some time been exercising the minds of those interested in and those responsible for the health of the workers. Hitler, as a result of the lessons learned during the last war and since he came into power, has neglected no means for fighting at an advantage and as one means, established numerous "sun hospitals" for the treatment of convalescing wounded. The value of "sun-baths" in factories was recognized years ago, but in Britain nothing was attempted in this direction in pre-war days but since the war many firms have followed suit in establishing sun hospitals, some of which are excellent, others indifferently so.

William Beaumont, writing in the *British Medical Journal*, June 13, 1942, describes an installation designed by him for a large colliery. It is of a revolutionary character and unique in Britain. It is capable of providing sun-baths for fifty workers every five minutes or 750 per hour, day or night. It comprises a corridor along both sides of which the lamps are fitted, five mercury-vapor arcs on each side, interspersed with a similar number of 500-Watt tungsten filament lamps. Running through the center is a conveyor belt. The miners after their shower bath pass through a door and step on to the conveyer belt and are carried through the irradiation corridor. At the end they step off and pass through a door which brings them to their clean clothes' lockers. The speed of the belt is so arranged that knowing the intensity of the radiations and the time taken for one man to travel the length of the corridor at the fixed distance from the lamps, the result is an exposure which produces on the average a transient or threshold erythema.

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Expert Opinion as to Possible or Probable Causal Connection

In an action for personal injuries resulting from an automobile collision, an examination after the accident by plaintiff's family physician, a specialist in gynecology, showed that plaintiff's uterus was retroverted and retroflexed. The physician testified that retroversion and retroflexion can result from different causes, but, from a vaginal examination made by him, his opinion of the cause of the displacement in this case was: "The accident in all probability." This opinion was objected to by defendant as invading the province of the jury.

The Maryland Court of Appeals, Langerfelder vs. Thompson, 20 A. 2d 491, cited decisions in various jurisdictions showing that in many cases it would be impossible to ascertain the cause of a bodily or mental ailment except with the aid of medical science. The law

(*Continued on page* 138)

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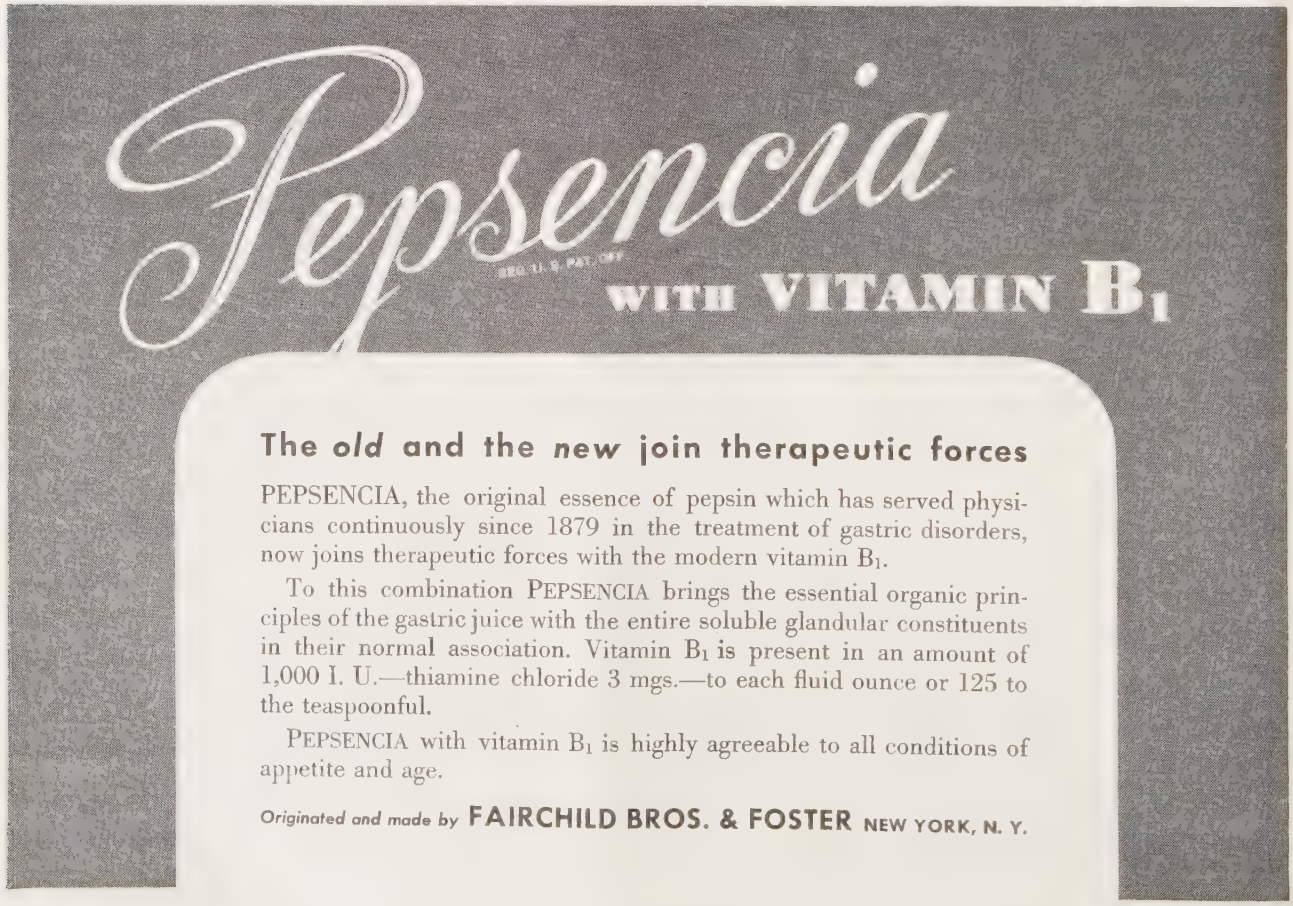
is settled in Maryland that where an injury or disease is of such a character as to require a person skilled in the science or practice of medicine to determine its cause, a medical expert may testify to his opinion thereof based upon his scientific knowledge and skill and upon personal observation or scientific deduction from general facts. As an instance the court cited a case concerning a premature separation of a woman's placenta, injured in an automobile collision, which necessitated a Cæsarean operation. And as the present plaintiff's ailment was of such a nature that the jurors could obviously not be expected to determine the cause without the aid of expert advice, the doctor's opinion did not usurp their function.

The witness had asserted that from his own professional experience he had no doubt that displacement of the uterus could be caused by a violent injury. Another specialist in gynecology, witness for the defendant, testified that he did not deny that "a rare accident" could produce such a displacement. The defendant argued that according to some medical authorities, retroversion and retroflexion could not be caused traumatically. The court adopted the prevailing view that the opinions of medical experts are admissible as to the cause which produced, or probably produced, or might have produced, a certain physical condition. As a reason the court stated: "The opinion of an expert as to the probability, or even the possibility, of the cause of a certain condition may frequently be of aid to the jury, for when the facts tend to show that an accident was the cause of the condition, the assurance of an expert that the causal connection is scientifically possible may be helpful in determining what are reasonable inferences to be drawn from the facts. Kimmie vs. Terminal R. R. Ass'n, 334 No. 596, 66 S. W. 2d 561, 565; 7 Wigmore or Evidence secs. 1920, 1976."

To the objection that the questions to the witness were not hypothetical, the court followed the general rule that when a witness is called to express an opinion based upon personal observation, it is unnecessary to submit to him a hypothetical question before he can express his opinion. "Here a medical expert is familiar with the facts of an accident and the nature of the injuries, he is competent to testify whether the injuries were caused by the accident, without the necessity of having the facts in evidence recounted to him before he gives his opinion. It would be an idle and useless ceremony to require the evidence to be detailed in the form of a hypothetical question where the main facts are undisputed and the expert is entirely familiar with the facts. Furthermore, any details which the expert has personally observed can be elicited either on direct examination or an cross-examination, and these details can be associated with the other grounds for the general conclusion; and if it is discovered that any essential facts have been overlooked, the weight of the opinion will thereby be weakened or entirely destroyed. The opinion of an expert, the grounds upon which it has been formed, and the weight to be accorded to it, are all matters for the consideration of the jury. Of course, where the evidence is conflicting or complicated by many details, or where the grounds upon which the witness is to base his opinion are not fully understood, it is proper for the trial court to require the facts to be submitted to him hypothetically, even though he had personal observations."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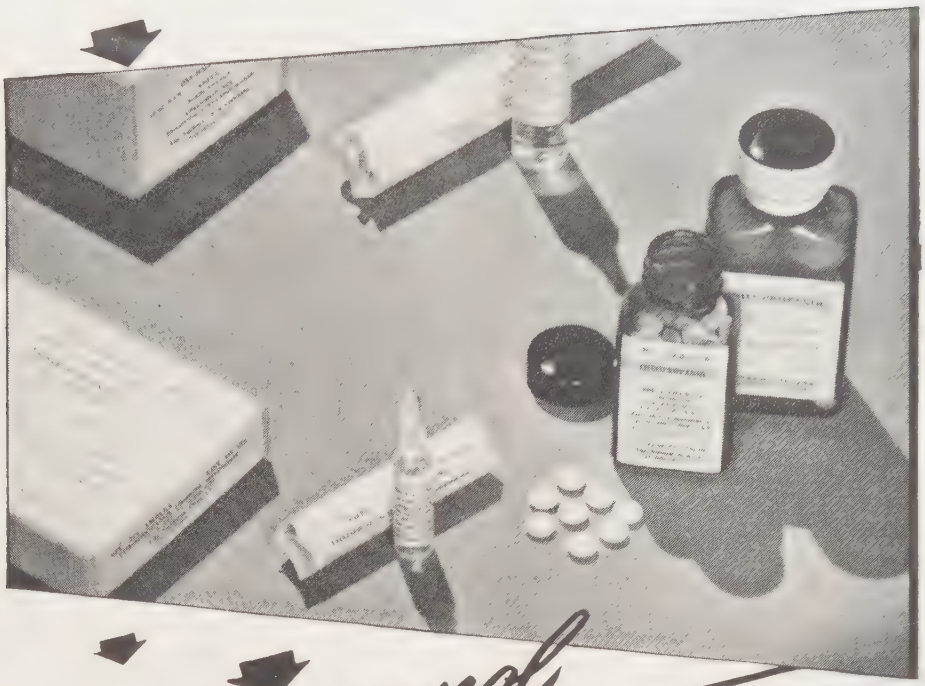

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Gas Defense Program

The program of gas defense now being developed by the Medical Division, Office of Civilian Defense, as it applies to the medical field, is described in a release issued on February 5th.

Duties of U. S. Citizens Defense Corps

A program for civilian protection against gas is being rapidly developed by the Medical Division of the Office of Civilian Defense. Courses have been presented for physicians selected from the faculties of medical schools to be trained as instructors in the medical aspects of chemical warfare. Arrangements are now being made for the presentation of courses by these instructors in their own medical schools. Training for nonmedical personnel is provided in gas specialist courses which since early December have been presented monthly at War Department Civilian Protection Schools.

The Medical Division of the Office of Civilian Defense has a Gas Protection Section responsible for organization and training for gas defense. This section functions through the nine Civilian Defense Regions. The duties to be performed before, during and after gas attacks are outlined for the following individuals and groups: State gas consultant, senior gas officer, assistant gas officers, gas reconnaissance agents, laundry officer, commander of the Citizens Defense Corps, incident officer, air raid wardens, police services, fire services, emergency medical service, local health department, public works, public utilities, transportation services and emergency welfare services.

Emergency Medical Service Duties

Duties before gas attack.—Plan with assistance of senior gas officer for the establishment of gas cleansing stations for cleansing gassed patients with other injuries and for cleansing of civilian protection personnel. Each hospital of one hundred and fifty beds or more should be provided with a cleansing station. Cleansing stations should be available in the ratio of one per fifty thousand population and should be located at smaller hospitals or casualty stations where one hundred and fifty-bed hospitals are not available in this ratio.

Recruit, train, and assign personnel to gas cleansing stations for cleansing services; provide instruction, in cooperation with the senior gas office, for general public and civilian protection personnel in self-protection and self-cleansing; provide for instruction of physicians in diagnosis and treatment of chemical casualties; assist hospitals in planning for handling of gas casualties; assure adequate distribution of protective clothing and gas masks and other protective equipment to members of mobile medical teams and train personnel in their use; make provision for training drivers of ambulances and sitting case cars in protection of their equipment against liquid-gas contamination; inform them of arrangements for vehicle decontamination by Emergency Public Works Service; arrange for the protection from contamination of the equipment used to transport contaminated casualties insofar as it is possible.

Duties during gas attack.—Upon advice of the senior gas officer and under the orders of the commander, man the gas cleansing stations; advise other services of the U. S. Citizens Defense Corps in regard to first-aid cleansing of their personnel; assign a mobile medical team to gas cleansing stations for first aid.

(*Continued on page* 142)

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Duties after gas attack.—Evaluate the effectiveness of the cleansing procedures which have been used; provide follow-up treatment of patients; prepare inventory of protective equipment available for use in future attacks and obtain additional equipment as necessary; cleanse bodies of the dead to facilitate identification.

Important functions assigned to the health department in the local program of gas defense are as follows:

Duties before gas attack.—Provide for analyses for war gases in samples of food and water. These tests may be performed in a local health department if laboratory facilities are adequate. In such case it is desirable to utilize the same laboratory facilities for the analysis for war gases of air and other materials. Where laboratory facilities other than those of the local health department are more suitable for use in the analysis of war gases, arrangements should be made by the local health department for the analysis of samples of water and food.

Advise the senior gas officer regarding the nature of instructions to the public concerning precautions to be taken in the event of water-supply contamination. Such instructions are to be promulgated by the health officer.

Cooperate with waterworks officials in planning for the protection and decontamination of the water supply.

Duties during gas attack.—Collect samples of food and water for laboratory analysis if contamination is suspected; inform the public regarding contamination of food and water supplies, including recommendations in regard to self-protection.

Duties after gas attack.—Decontaminate, destroy, or otherwise provide for the handling and disposal of contaminated food supplies; assist the waterworks in the treatment of contaminated water supplies; advise the senior gas officer in regard to the safety of the public water and food supplies and inform the public regarding contamination of such supplies, and methods of dealing with it.

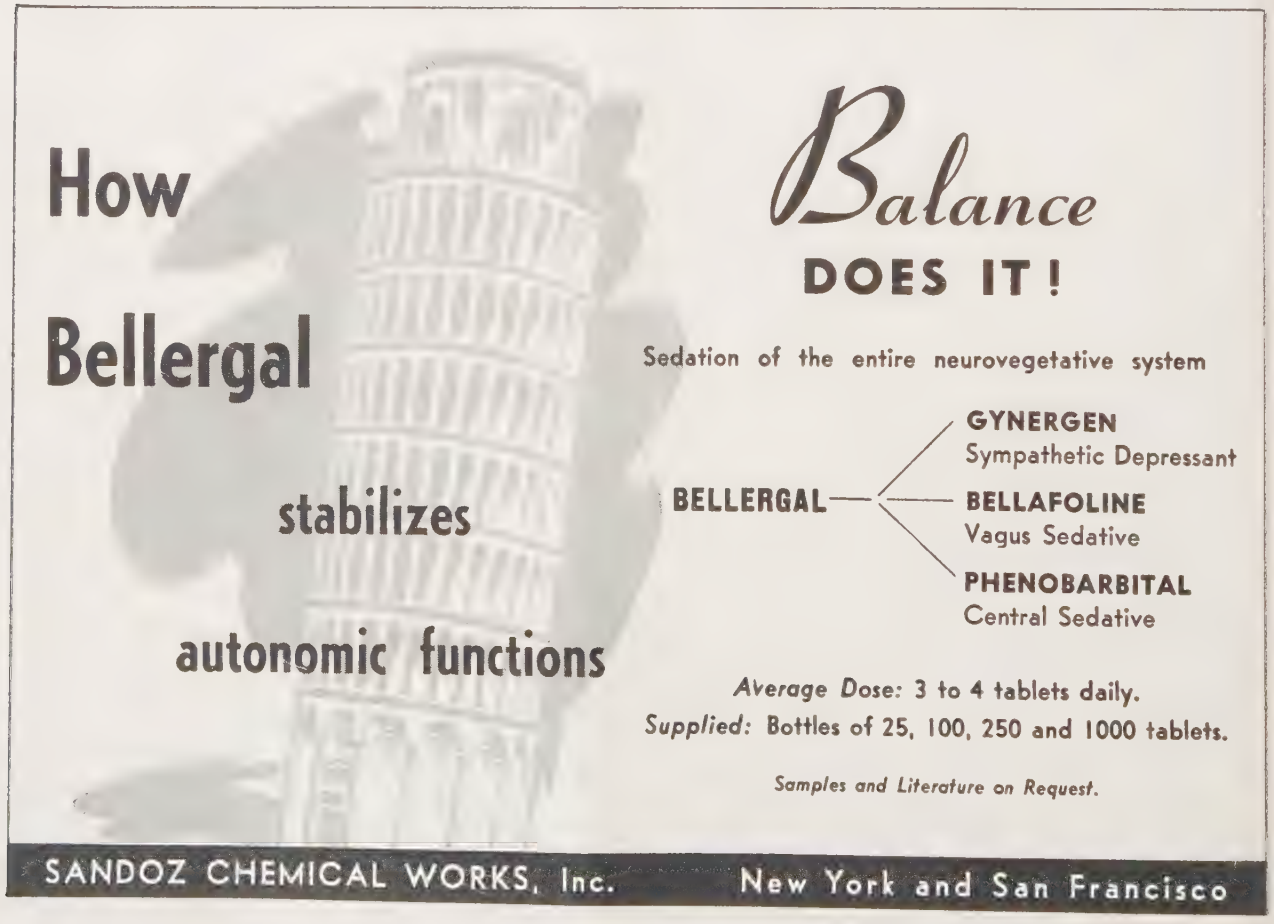
Obtain reports of analyses of samples of water or food and take appropriate action. Save specimens of contaminated water and food for transmission whenever necessary to a Chemical Warfare Service or other laboratory, by the senior gas officer.

Gas masks are now being distributed to the personnel of the protective services. It is pointed out that since valuable and critical materials are used in the manufacture of gas masks, the utmost care must be exercised in the handling, distribution and storage. No person should receive a mask until he has been trained in its use and care, including proper storage, it is advised.

Clinics, A New Periodical

The first issue of *Clinics* appeared in June 1942. It contains a symposium on burns and shock, original contributions on influenza, headache and cardiac deficiency, adenopathy, vulvovaginitis, vitamin B deficiency, tuberculosis, pericarditis and vascular disease. The material is well presented, practical in scope and up-to-date in content.

This new periodical, which will appear bimonthly, is the successor to the *New International Clinics* which was published quarterly. The editor will continue to be Dr. George Morris Piersol and the publishers are J. B. Lippincott Company, Philadelphia, Pa.



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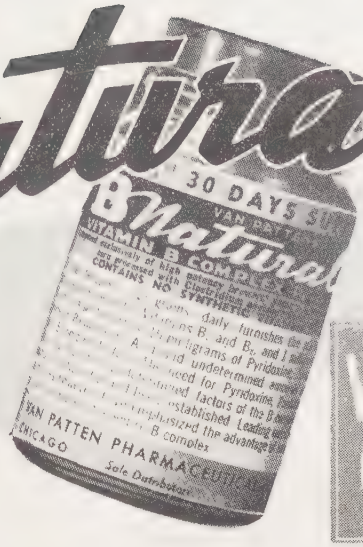

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It has been recognized for some time that dry brewers' yeast is an unrivalled natural source of the B complex. The use of yeast as a food has recently been recommended as one of the means of limiting the deficiencies resulting from two major defects in our modern diet.[4] The practical usefulness of yeast for suitable incorporation with foods has already been recognized for both civilians and the armed forces.[5]

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1. U. S. Dept. of Agr. Circ. 507, Jan. 1939; J. Am. Diet. Assn, 18:1, Jan. 1942; J.A.M.A., 118:944, March 21, 1942; J. Iowa State Med. Soc., Feb. 1942; J.A.M.A., 121:93, Jan. 9, 1943.
2. Ann. Int. Med., 15:953, Dec. 1941.
3. Am. J. Med. Sci., 203:114, Jan. 1942; J.A.M.A., 117:910, Sept. 13, 1941; *Ibid.*, 117:913, Sept. 13, 1941; *Ibid.*, 117:918, Sept. 13, 1941; *Ibid.*, 117:2245, Dec. 27, 1941.
4. J.A.M.A., 120:529, Oct. 17, 1942.
5. Southern Med. J., 34:159, 1941; J.A.M.A., 120:529, Oct. 17, 1942; *Ibid.*, 121:93, Jan. 9, 1943.

Health Advisory Council

A National Health Advisory Council has been created by the Chamber of Commerce of the United States, the purpose of which is to consider national health problems in relation to the war program. Approved technical health information developed by the country's many scientific associations will be sent by the Council to business organizations and their members throughout the country, so there may be brought about a better public understanding and appreciation of medical science as a means of safeguarding public health to win the war. It will work through the Chamber of Commerce of the United States as a central organization, which, in turn, will work through trade associations, chambers of commerce, and corporations and firms. The Council's membership starts with thirty of the nation's leading medical and health authorities. This will be increased as the work progresses.

At the first meeting, held in Washington, D. C., February 5th, a round-table discussion of wartime health problems was held. Discussion leaders were Dr. James S. McLester, professor of medicine, University of Alabama; Dr. Wilson G. Smillie, Medical School, Cornell University; Dr. Felix J. Underwood, State Health Officer of Mississippi; Dr. Leverett D. Bristol, health director, American Telephone and Telegraph Company, and Dr. H. M. Marvin, Yale University.

Dr. McLester is general chairman of the Council; Dr. Smillie is chairman of the community health committee; Dr. Bristol is chairman of the industrial health committee, and Dr. James E. Paullin, professor of medicine, Emory University, Atlanta, Ga., is chairman of the individual health committee.

War Work of the Society of Friends

Though the Society of Friends cannot reconcile war with their religious beliefs, they have in this war, as in the previous great war, devoted energy and resources to the relief of the suffering produced and shared much of the danger of the combatants, says the London correspondent of the *J.A.M.A.* (February 13, 1943). In the Middle East they have a unit of more than one hundred and fifty members, some of whom are working under the auspices of the British Red Cross, especially on mobile surgical units. They manned a hospital at Tobruk until that place fell. The report on the third year's work describes the establishment of mobile clinics in Syria to which Moslem, Christian and Druse resort; the distribution of medical supplies on the Burma Road, the salvage of $600,000 worth of medical supplies from the Rangoon docks when the Japanese were closing in, and their transport for three thousand miles into the northern provinces of China; the provision of surgical aid for the raided towns of Burma, sending surgical teams to help the Chinese on the Yunnan front; organization of first aid posts in view of possible air raids on Indian cities and sending forty men including two doctors for medical work in outlying regions of Ethiopia, where there are few facilities for combating the high incidence of sickness. A unit for work in the emergency medical service and other hospitals in England is also maintained.

A two-day conference on industrial health was held in Indianapolis on February 25th and 26th. The purpose of the conference was to train physicians for war industries.

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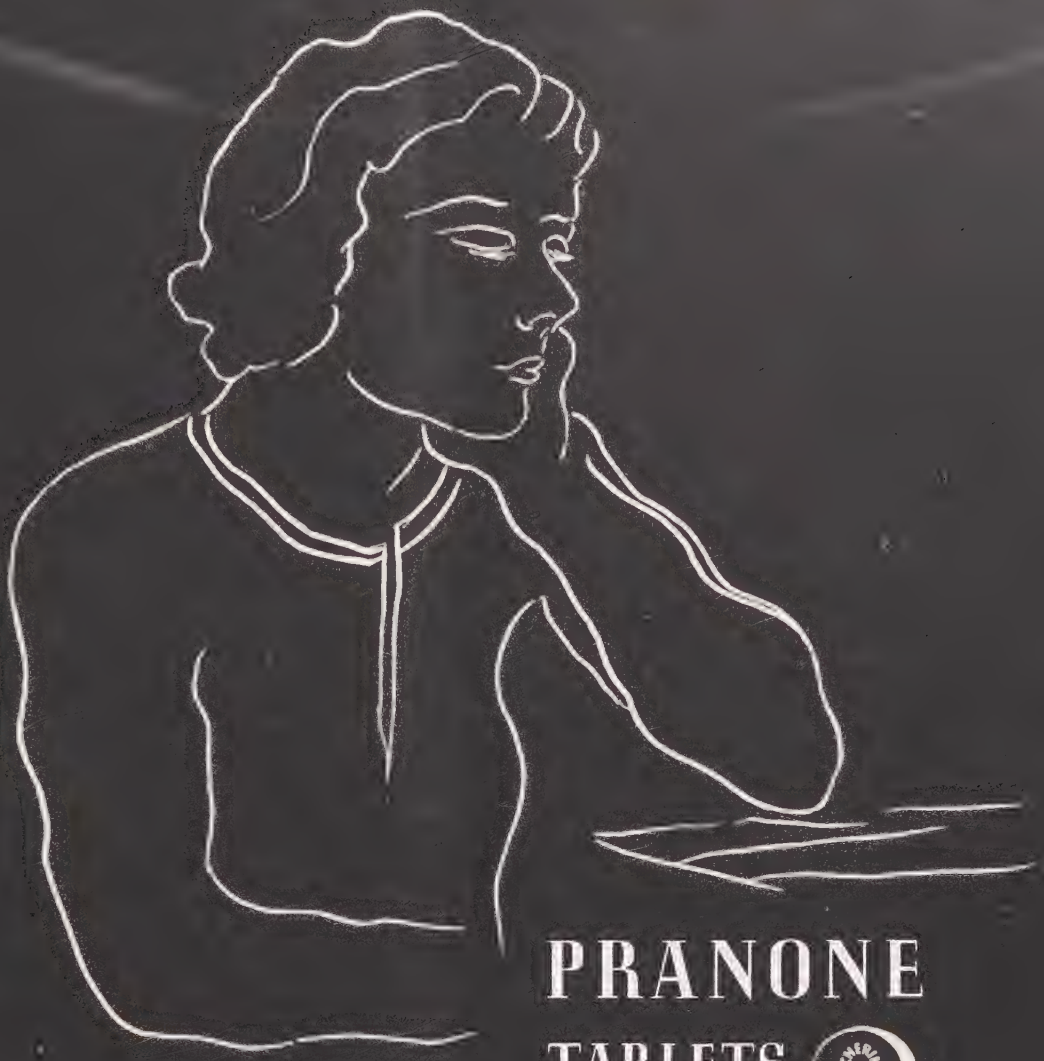

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Our Contributors

Alfred Gordon, M.D., Philadelphia, Pa., is a graduate of the Université de Paris Faculté de Médicine. He is at present consultant in neuropsychiatry to a number of hospitals. His research work is continuous in various phases of neurology and psychiatry. His pastime is music, and his hobby is fencing.

* * *

W. J. McCormick, B.A., M.D., Toronto, qualified as a Licentiate of the College of Physicians and Surgeons of Ontario, in 1906. Following the 1937 epidemic of poliomyelitis in Toronto, he made an extensive study of this disease in comparison with beriberi, which resulted in his hypothesis of vitamin B deficiency as an etiological factor in poliomyelitis and sleeping sickness.

* * *

LeGrand Kerr, M.D., F.A.C.P., F.A.A.P., Brooklyn, N. Y., was graduated from Bellevue Hospital Medical College in 1892. In 1906 he restricted his practice to pediatrics. He is a Fellow of the American College of Physicians and formerly served as a member of its Council. He is also a Fellow of the American Academy of Pediatrics and a Licentiate of the American Board of Pediatrics. He has written several books on diseases of children. His chief hobby is pen and ink etching, especially drawing with pen and colored inks in which he pioneered several years ago.

* * *

B. Liber, B.A., B.S., M.D., Dr.P.H., New York, N. Y., was born in Rumania and educated in France. He received his degree in medicine in Vienna in 1904 and his degree of Doctor of Public Health in the United States in 1919. He is at present adjunct professor of psychiatry at the New York Polyclinic Medical School and director of the Mental Hygiene Clinic of Polyclinic Hospital. He is an artist and a painter, and his hobby is working in his garden.

* * *

Howard Lilienthal, M.D., New York, N. Y., was graduated in medicine from Harvard Medical School in 1887. He served in World War I as a lieutenant colonel and was director of Base Hospital 3, A. E. F. He was formerly surgeon to Mt. Sinai and Bellevue Hospitals, and is at present consulting surgeon to both. He has written many books and papers on the subject of surgery, especially thoracic surgery. His hobbies include dry fly fishing and painting, and although he has retired, he is always interested in medical matters.

* * *

Ruth S. Jewett, M.D., Winter Park, Fla., received her degree in medicine from the University of Virginia Department of Medicine in 1931. She is at present affiliated with the Florida Sanitarium, Winter Park, and with Orange General Hospital, Orlando, Fla. Her practice is limited to internal medicine.

* * *

Harry S. Snyderman, M.D., Philadelphia, Pa., received his degree in medicine from the Medico-Chirurgical College of Philadelphia (University of Pennsylvania) in 1907. He is a Licentiate of the American Board of Pediatrics, pediatrist to Northern Liberties Hospital, and was formerly associate in pediatrics at Temple University Medical School and Jewish Hospital. He is a member of several medical associations.

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Mental Aspects of Aviation Medicine

More than two million persons now fly each year, exclusive of military flying, and, therefore, every practicing physician must have knowledge concerning the effect of flying on the human economy, said Colonel Eugen G. Reinartz, Medical Corps, U. S. Army, Commandant, School of Aviation Medicine, Randolph Field, Texas, in a recent address. A person might fly in spite of a physical handicap, he said, but with a marked handicap of psychogenic origin, loss of stability or improper coordination of mind and body, flying would be unthinkable. Some take flying training in their stride, and weather all the new stresses imposed upon them, while others are unable to sublimate their difficulties. An important fact brought out by Colonel Reinartz was that war conditions and the exigencies of the Service had produced no novel or unique phenomena. He then discussed some of the syndromes encountered by flight surgeons in aviation.

Aeroneurosis.—This functional nervous and psychic disorder occurs frequently in aviators and is characterized by gastric distress, nervous irritability, minor psychic disturbances, fatigue of the higher voluntary mental centers, insomnia and increased motor activity. It may develop in persons who are undergoing flight training, but is more likely to occur in those with whom flying is a profession. The principal exciting etiological factor is emotional stress.

Serious airplane accidents invariably produce profound psychic shock, the effect of which on the central nervous system cannot be accurately evaluated. The witnessing of crashes and the death of one's friends in the most violent type of death known, leaves a lasting emotional scar. In order to fly, such experiences must be repressed and in the repression new conflicts may arise. The instinct of self-preservation always brought into play in flying frequently arouses emotional disturbances, and although the fear engendered is repressed, the effects of the subconscious nervous trauma are cumulative and have a distinct bearing on the development of aeroneurosis.

Anoxia.—Experimental work on the effects on the brain of repeated anoxia indicates that prolonged periods of significant oxygen deprivation never leave the brain unharmed. These experiments seem to point to the possibility of a gradual lowering of cerebral pressure in persons repeatedly exposed to an inadequate supply of oxygen. These findings are of great significance since the war in the air, at almost unheard of altitudes, has assumed such large proportions.

Aeroembolism.—This condition is described as a disease produced by a rapid decrease of pressure below one atmosphere, such as may occur in aircraft flights to high altitude and which is marked by the formation of nitrogen bubbles in the body tissues and fluids. The formation of nitrogen bubbles in the body at high altitudes is fundamentally the same physical process as is found in "caisson disease" or "bends." The symptomatology depends upon the portion of the anatomy in which the bubbles of nitrogen lodge. In the spinal fluid, they cause increased intracranial pressure with attendant symptoms. In the tendons, fascia, periosteum, nerve sheaths and bone, they cause pain. Nerve pain may be in the form of a descending neuritis with marked tenderness along the course of the whole nerve, or it may be only peripheral, affecting the nerve endings. The most frequent site of pain is around one or more joints and this is usually the first indication of an impending attack of aeroembolism. This pain may be mild at first, but rapidly becomes almost intolerable. The prophylactic treatment of this condition is, of course, the restriction of flying below levels at which this disease is likely to occur.

Airsickness.—While airsickness, from a purely medical aspect, is ignored by many, it is nevertheless a major problem in aviation. Candidates for flying training who give a history of seasickness, car sickness, train or swing sickness, usually develop airsickness in training. The seriousness of an attack and its effects are not limited to the exact time of flight, but may cause a disability lasting hours after the flight is concluded. There is no case on record of permanent ill effects or of death from airsickness. Airsickness is not only one of the most far reaching but also one of the most important unsolved problems of aviation medicine.

Epilepsy.—The electroencephalograph is being used for the detection of the frank epileptics, and the possible detection of those who have the epileptic type of personality and reactions without experiencing the seizures. The types of electroencephalograph patterns found in successful pilots and unsuccessful "wash outs" are being studied with the view of aiding in the selection of pilots.

Fear.—Fear in some form or another is frequently experienced while flying. This is especially true in combat flying. If the effort is long continued, fatigue sets in and creates a fear of incapacity, fear of failure, and a fear of inferiority. It is common sense to be afraid of real danger. It is the problem of the flight surgeon to elucidate, to beginning flyers especially, the facts of the situations in which they find themselves. Real knowledge is one of the best antidotes for unfounded fear.

Noise.—It is a matter of common knowledge that very loud sounds produce sensations of discomfort, at times amounting to acute pain and with persistent ringing in the ears. Any factor, such as noise, which tends to lower the physiological level of activity of an organ is especially undesirable in pilots who are exposed to anoxia and other resultants of altitude.

Cold.—The effect of cold on flying personnel has been the subject of much study. While some experiments are conducted at actual altitudes in airplanes, most of the research has been done in the refrigerated altitude chamber, where conditions can be better controlled. It is hardly possible to keep warm in the low temperatures encountered at high altitudes. All manner of symptoms arise, beginning with the sensation of chilliness and progressing to actual pain. The hands and the feet are the first to be affected. Some of the most serious effects of cold upon the pilot are those in the psychic field and are due to the physical discomforts experience.

Vibration.—Vibration generally creates tenseness and muscle fatigue. This may be due to the action directly on the muscles and bony framework or may be due to the mental effect produced by vibration with its secondary tensing of the musculature. Whatever the reason, fatigue results.

In conclusion, Colonel Reinartz states that much important research is being carried on in the psychiatric aspects of aviation medicine. It is a vital problem to which the medical profession is giving increasing consideration.

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CARE OF THE PREMATURE INFANT*

HARRY S. SNYDERMAN

Philadelphia, Pa.

Infants born before the thirty-sixth week of gestation and those weighing less than five and one-half pounds (2500 grams) usually differ anatomically and physiologically from normal full-term infants. Low birth weight is not always associated with prematurity, as the small size may be an inherited characteristic, and not all premature infants weigh less at birth than the average for infants born at term. In general, however, those infants who are born prematurely and those who are very small at birth are also often immature and require special care and feeding, as they are born with a tremendous handicap; they must have special attention not usually accorded to the normal infant. In those instances in which the premature birth is the result of disease, further special therapeutic measures may be necessary.

Prematurely born infants have little muscular activity, the reflexes are poorly developed, even the sucking and swallowing reflexes at times are almost absent. The respiratory center often fails to react to normal stimuli so that the respiration may be irregular and interrupted by long periods of apnea. These periods may be so long at times as to lead to death from asphyxia.

Intracranial birth hemorrhage occurs more frequently in the premature than in the full term baby; since it often affects the respiratory center, it is a more common cause of apnea than immaturity of the nervous system. Because most of the calcium present in the body of a full term baby is deposited during the last three months of fetal life and half of it during the last month, the cranial bones of the premature infant are, therefore, softer and more pliable than those of a baby born at term. Hence marked molding of the head is almost certain to occur and tears of the tentorium are much more likely. Thus, intracranial hemorrhage is common despite normal delivery.

Other characteristics of premature infants include a marked tendency to thermolability, the heat regulating mechanism not being well developed. The body temperature tends to fall below normal on slight exposure to cold and to rise above normal when the environmental temperature is high. The digestive capacity of prematurely born infants is small because the normal digestive enzymes and the absorption are poor. The gastric capacity is likely to be disproportionately small.

*Read before the Medical League, Philadelphia, Pa., December 14, 1942.

A successful solution of the problem of premature infants demands a combination of common sense with scientific principles. In addition to gentleness, warmth, and rest, a sound feeding procedure is obviously a major requirement. Likewise essential are good nursing care and a suitable physical environment. Of the three, good nursing care is considered the most important.

It is generally believed that the majority of premature infants who live for forty-eight hours can be saved. Mounting evidence also indicates that the heavier the infant the better the prognosis. However, a premature infant weighing less at birth but possessing greater vitality will occasionally have a better prognosis.

Care at Delivery

The temperature of the delivery room should be between 80° and 90° F. Whenever possible a specially trained personnel should stand in readiness to remove mucus from the air passages with sterile gauze or a catheter and, when necessary, to administer oxygen and carbon dioxide. After ligation of the cord, the infant should be wrapped in a warm blanket, put into a heated bed and kept in the Trendelenburg position (head and shoulders lower than the rest of the body). This position prevents the passing of mucus into the lungs where it might produce atelectasis or pneumonia. The eyes should be treated to prevent ophthalmia neonatorum, and, except in extreme emergency, the infant should not be moved for at least one hour after birth, when it should be taken to a nursery specially reserved for premature infants.

The Premature Infant Nursery

The ideal premature infant nursery is air conditioned and divided so as to provide a separate cubicle for each infant. A cabinet containing all the necessary utensils is kept in the cubicle; each infant should be assigned its personal equipment. Air conditioning is of paramount importance. When room temperature and humidity are automatically controlled, nurses are assured greater freedom for other needs of the infant. Because the premature infant has a poor heat regulating mechanism it will not gain weight if its temperature is either below or above normal. Therefore, the maintenance of body temperature together with adequate nutrition and prevention of infection are fundamental requirements.

No incubator is necessary for infants of three pounds (1400 grams) or over if they are properly clothed and the nursery is kept at a temperature of 85° F. and a relative humidity of sixty-five percent. However, where special control of room temperature and humidity is not possible, one of the commercially available incubators may be used. When a special incubator is not available, the infant may be placed in an ordinary crib lined with hot water bottles, and the water in the bottles should be kept at a temperature of 110° to 120° F. These hot water bottles must not touch the infant and must never be full. To maintain a proper temperature the water should be changed at regular intervals. Equally effective are a few incandescent bulbs placed under the crib and separated from it by a strip of asbestos.

The care of the skin is very important in the prematurely born infant as the slightest trauma may mean the difference between saving the baby or losing it. The skin may be cleansed with warm sterile liquid petrolatum or olive oil, but if the baby is very small and very immature it is probably better not to disturb it at all. The genitalia and buttocks should be cleansed with warm sterile water only when necessary and this only twelve hours after birth.

Clothing

In the institution or home where proper humidity and temperature are maintained the average premature infant requires a flannel or birdseye diaper; a cotton flannel or ten percent silk or wool shirt; a flannel abdominal binder; a flannel wrapper with draw strings at the bottom and wrist length sleeves; a cotton receiving blanket to be wrapped loosely around the thighs and legs; stockings, and one or two woollen blankets. The umbilical band is not needed after the cord falls off.

Infants weighing less than three pounds should wear a jacket made from two pieces of gauze separated by a layer of cotton. A shirt is worn under the jacket.

Feeding

The feeding of prematurely born infants presents special difficulties. The digestive capacity is small and only small amounts of food can be given at a time, because of the small gastric capacity, yet the total food requirement is fairly high. The daily calorie requirement is set at from seventy to eighty calories per pound of body weight. Somewhat lower calorie intake is given the first few days of life, and in later feedings as much as one hundred calories per pound per day are needed to assure a satisfactory gain in weight.

The question as to when to start regular feedings has always been of great importance in the care of premature infants. Too often it is difficult to resist the temptation to begin feeding too soon after birth. A little time spent in determining whether the baby can or cannot swallow may prevent aspiration pneumonia. The average premature infant does better if it is not fed at all for the first twelve hours after birth, and in the case of very small infants it is even advantageous to withhold food for thirty to forty-eight hours. During this period, however, from fifteen to twenty cc. of Ringer's or normal saline solution should be administered subcutaneously twice daily.

The following is a schedule that may be followed in the average case. No feeding during the first twelve hours; feed three to five cc. of water from the thirteenth to the sixteenth hour; at the eighteenth hour breast milk may be started and then given every three to four hours. Opinion is unanimous that breast milk is the best food for the premature infant. The mother of the premature infant should be encouraged to stimulate lactation and maintain it when established. The breast should be pumped four or five times daily and the milk preserved in sterilized containers under refrigeration. If this is impossible, we in Philadelphia are fortunate in having a bank where breast milk can always be obtained. If for any reason it is impossible to obtain breast milk, there are a number of infant foods which have been clinically established as ideal substitutes for breast milk. Biolac[1], in my opinion, is one dependable breast milk substitute. Biolac[1] is a sterilized liquid evaporated type modified milk when properly diluted is nutritionally and physiologically like mother's milk. The moderate fat content minimizes digestive disturbances, and the ample protein, mineral and vitamin values provide for the greater growth requirements of prematurity. The formula may be weakened by appropriate dilution and then gradually brought up to the prescribed strength. For the first few days even breast milk should be diluted with an equal volume of boiled water or a five percent solution of glucose. The diluent is then gradually reduced in volume until the infant is receiving whole breast milk. If there is no weight gain by the end of the first week breast milk may be fortified with calcium caseinate in the proportion of one tablespoonful to three fluid ounces of breast milk.

Administration of Food

A premature infant need not be moved from the crib or incubator for feeding. To minimize restlessness, regurgitation and colic, and to assure better sleep and breathing, the infant should be kept in the Fowler position at an angle of forty degrees during and after feeding. Infants who have suffered birth injuries will benefit from this position. From time to time the infant should be placed on its right side, or even face down to avoid colic, lung congestion and atelectasias. No premature baby has sufficient sucking power to obtain milk from the mother's breast, moreover, many of them cannot even swallow. Those infants are best fed by gavage. A No. 12 French catheter or American No. 8 is used. A funnel or Breck feeder is attached to one end and the other end is first dipped in sterile water and then introduced just beyond the pharyngeal sphincter with the infant in the Fowler position. The catheter should be passed close to the back of the pharynx to avoid the trachea. There is no need to introduce the catheter into the stomach. The milk is poured into the funnel which should not be unduly elevated. After the feeding the catheter should be gently withdrawn, in which procedure the sides should be pinched together to prevent any excess milk from entering the trachea. Gavage feeding should be replaced by dropper or Breck feeding as soon as possible and later by bottle feeding.

Breck feeding or the common dropper tipped with

[1]Biolac Modified Milk for Infants: Prepared from whole milk, skim milk, lactose, vitamin B, concentrate of vitamins A and D from cod-liver oil and ferric citrate; evaporated, homogenized, sterilized. The Borden Company, New York, N. Y.

a short length rubber tubing is used for those prematures who can swallow but in whom the sucking reflex is poorly developed. When using the Breck feeder the pressure in the bulb should be just sufficient to enable the infant to get the food; too great pressure often results in vomiting or in aspiration of food with subsequent atelectasis or pneumonia.

As soon as the sucking reflex is developed, usually when the infant reaches four pounds, the Breck feeder or medicine dropper should be discarded for the breast or bottle. Holding a bottle in an infant's mouth by a support, a rolled up diaper, or a mechanical device, invariably invites complications. Premature infants should be fed by hand, the bottle being withdrawn from time to time so that the baby may readjust its breathing. The bottle is held so that the neck is always filled. Failure to observe this precaution leads to air swallowing with subsequent vomiting and colic.

Schedule of Feeding

Premature infants should be fed every three or four hours, seven to eight times daily. Small infants weighing under three pounds may require feeding every two hours or ten times a day. The infant should be awakened at feeding time but the early morning feeding may be discontinued as soon as possible.

Vitamin and Mineral Requirement

The increased metabolic requirement of the premature together with the small food intake makes it imperative to provide supplementary vitamin and mineral therapy. Depending on the basic formula that is fed, suitable additions should be made to bring the total daily intake up to normal level.[2]

The Daily Bath

Infants under three pounds (1400 grams) should be sponged once daily with tepid water at 90° to 95° F. The room temperature should be between 85° and 90° F. Only a small portion of the body should be exposed at one time. Tub bathing for larger infants, four and one-half to five pounds, can be started at the third week. The water should be tepid, 90° to 100° F., and a simple soap should be used. The infant should be dried thoroughly, dressed and returned promptly to the crib.

Temperature record: Rectal temperature should be taken twice daily. An even daily temperature is necessary to the welfare of the premature. Weight progress is arrested when the temperature drops below or rises above normal. Temperatures of 99° to 100° F., are more favorable than that ranging from 97° to 99° F., particularly in infants under three pounds.

Small infants should be weighed only two or three times a week, whereas those over four pounds may be weighed daily. Infants should be weighed in the nude to permit observation of any abnormality, as hernia, rickets, etc. Premature infants usually regain their birth weight in eighteen to twenty-one days; however, many regain it in nine to twelve days, especially those fed on artificial formulas. The average daily gain is about one-third of an ounce. There may be no gain for a few days and then the weight will suddenly increase. As long as there is steady progress from week to week the method of feeding should not be changed.

Common Complications of Prematures

Prematures are extremely susceptible to infection and even such a mild infection as a cold may have fatal consequences. Whenever possible only one nurse should be in charge of the infant with a single individual to relieve her. The nurse should take all necessary precautions, as wearing mask and gown. Should she contract a cold or other infection, she should be relieved from duty. No visitors should enter the room.

Cyanosis

The respiratory effort of the prematurely born infant at best is poor, and often insufficient to expand the lungs completely. The respirations are not only shallow but often irregular. At times it appears that the infant forgets to breathe. During these apneal attacks cyanosis may become extreme and death may occur. The cyanosis may be intermittent or persistent, or characterized by an occasional attack in the first day or two. The chief causes are cerebral irritation, abdominal distention associated with feeding, exhaustion, exposure to cold, hyperpyrexia, congenital heart disease or diaphragmatic hernia. While spinal tap, adrenalin, blood and vitamin K all have their place in the treatment of cyanosis, the administration of oxygen at the rate of 80 to 120 drops per minute as seen in the water bottle, or three liters per minute measured by gauze, is by far the most important and effective therapy.

Fever

The normal temperature for a premature infant varies between 98.6° to 100° F. Fluctuations of two or three degrees are decidedly harmful. The premature easily becomes infected and fever may or may not develop. Subnormal temperatures are not uncommon with upper respiratory infection, such as otitis media, pharyngitis, bronchopneumonia and sepsis.

Intracranial hemorrhage often occurs in the premature, in apparently normal deliveries, or with slight obstetrical manipulations. I shall not repeat all causes, symptoms and treatment, as I have read a paper on this subject before this society in 1941 (2); but will mention only gentleness, warmth, rest, oxygen, blood, vitamin K and good nursing.

Vomiting and Diarrhea

Gastrointestinal upsets in the premature readily result from overfeeding, rough or too frequent handling, improper formulas or improper methods of feeding and upper respiratory infections. I am not discussing here the infectious diarrhea of the normal newborn which often occurs in epidemic form in institutions. With such gastrointestinal upsets there may be a rise in temperature or it may be subnormal; the abdomen is distended, the infant vomits, has watery green stools and appears prostrated. The treatment is a period of starvation. During this period give five percent glucose by clysis, and blood transfusion, then gradually place on breast milk or a proper formula. The abdominal distention may be relieved by starvation, gastric lavage or enema. It is not advisable to give premature infants a cathartic in any form.

[2]Biolac provides 2500 U.S.P. units vitamin A, 85 U.S.P. units vitamin B_1, 400 U.S.P. units of vitamin D, and a minimum of 8 milligrams iron, per 16 fluid ounce tin. The content of vitamin C is variable, and additional amounts should be supplied from other prescribed sources.

Other complications are convulsions, atelectasis, jaundice, hernia, tetany, anemia, thrush, upper respiratory infections, pneumonia. All these require special treatment which cannot be discussed in detail in a limited paper.

Conclusion

The principles governing the successful care of a premature infant can almost be formulated. Briefly, they include a separate room, properly heated and humidified, good nursing attention, careful choice and administration of food, avoidance of infection, gentleness, rest and warmth. Breast milk and biolac are foods of outstanding preference for premature infants. Supplementary vitamin and iron therapy are indicated in the breast-fed infant.

With a modicum of interest in their behalf, and with strict attention to diet and care, most premature infants can be—and should be—*saved*.

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2010 PINE STREET

AMPUTATIONS AND PROSTHESES THROUGH THE CENTURIES

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(*Continued from page 97*)

The Nineteenth, The Greatest Century

The crowning achievement of this century was the birth of antiseptic surgery. Before the days of aseptic surgery healing following amputation was by granulation with excessive scar formation in the stump. Infection was a great barrier to proper healing. After the advent of clean surgery infection diminished remarkably. From this period modern surgery finds its greatest inspiration. Prior to considering this era mention should be made of other notable contributions to surgical science during the nineteenth century.

Napoleon's surgeon-in-chief was Dominique Larrey (1766-1842). He was one of the first to amputate at the hip-joint with success (1803). As chief surgeon to the Grande Armée he became a master at amputation. It is said that at the battle of Borodino he performed as many as two hundred amputations in one day (4).

The outstanding English military surgeon of the time was George Guthrie (1785-1856) of London. He served in America and in the Napoleonic wars. At Waterloo Guthrie successfully amputated the hip-joint (1815). His most important work is his *Treatise on Gunshot Wounds of the Extremities requiring Amputation* (1815) (4).

Many isolated operations and surgical procedures were described. Of these mention is made of the interscapular-thoracic amputation (excision of arm, scapula and clavicle) which was performed by Ralph Cuming of the Royal Navy (1808). In England excision of the femoral head was described for the first time by Anthony White (1822). Jacques Lisfranc of France devised many new operations for the partial amputation of the foot (1815) and described methods of disarticulating the shoulder joint (4).

The war of 1812 revived the interest in artificial limbs. During this period a famous appliance came into prominence. This is called the Anglesea leg. It belonged to the Marquis of Anglesea who having lost his leg had a false one constructed by James Potts of London. This appliance is considered to be the forerunner of the type which is termed the American leg. Among these socalled American legs are a ball-and-socket joint apparatus by Dr. Bey and the Mark's leg (19).

The renowned William Beaumont describes a scene following a battle near Plattsburg (War of 1812) in which innumerable amputations were performed. "A most distressing scene ensues in the hospital—nothing but the groans of the wounded and agonies of the dying are to be heard. The surgeons wading in blood, cutting off arms, legs and trepanning heads to rescue their fellow creatures from untimely deaths. To hear the poor creatures crying, 'Oh, my God! Do, Doctor, Doctor! Do cut off my leg, my arm, my head to relieve me from misery! I can't live, I can't live!' would have rent the heart of steel, and shocked the insensibility of the most hardened assassin and the cruelest savage. It awoke my liveliest sympathy, and I cut and slashed for forty-eight hours without food or sleep. Who can think of the shocking scene when his fellow creatures lie mashed and mangled in every part with a leg, an arm, a head or a body ground in pieces" (1, 12). No mention is made of postoperative care or the use of prosthesis. The crudeness of amputation is clearly depicted during this period. As Beaumont states it was a "slashing" procedure.

Little real improvement occurred up until the United States Civil War. At that time several American limbmakers obtained patents to protect their products. During this period the wars in the Crimea and in Italy produced many limbless soldiers. A well-known leg has been mentioned by Steindler called the Beaufort limb. This was described in Paris and is remarkable because it had an automatic knee lock (1867).

The unsanitary conditions in military hospitals resulting from the Crimean War (1854-56) were conducive to terrible infections. Uncleanliness in the war zone produced infections causing the loss of many arms and legs. This war gave birth to the modern idea of nursing.

Florence Nightingale, a woman of talent and vision, set out for the battlefield with a staff of trained nurses to care for the sick and wounded. So it was that the principles of hygiene were applied to hospital administration. Where formerly there was chaos and sorrow, she brought orderliness and happiness. Although her work in the Crimea was accomplished several decades before Lister's revolution in surgery, nevertheless, her principles were based on the Listerian concept of scientific cleanliness.

In the *Lancet* (1867), Joseph Lister (1827-1912),

later Lord Lister, published his observations which profoundly altered the history of amputation. With Lister's asepsis modern amputation commenced to ascend scientifically with a resultant benefit to the patient. His work was the beginning of antiseptic technique. Prior to Lister's time, because of infection, hospitals were considered to be houses of death. Into the dark infected operating room Lister brought the light which dispelled the blackness and eradicated the stigmata of disrepute which had branded the septic surgeon. With the advent of aseptic surgery less infection and sloughing of the soft parts of amputated stumps followed.

The Listerian principles were adopted by the American military surgeon. In 1877, Captain Gerard, U.S.A., returned from England thoroughly convinced of the value of Lister's antiseptic method. His report to the surgeon general contained a full description of this method. Thereafter Weir's antiseptic spray apparatus was issued as standard equipment to the United States Army medical department.

Colonel William Arthur, U.S.A., who was on active duty during 1870 and 1880 recounted the following reminiscence: "At this post, Fort Washakie, a cavalry soldier was accidentally shot in the right thigh. The bullet passed across the limb in front of the femur, but tore through the femoral artery. It was necessary to tie the external iliac just below Poupart's ligament. This operation was done in the ward on a mess table borrowed from the troop barracks, for our three attendants ate in the kitchen and we had no operating table. Collateral circulation was not established and soon it was evident that gangrene of the foot and leg was inevitable. While waiting for a line of 'demarcation' to form between dead and viable tissues, I was called to the hospital one night to find that secondary hemorrhage had set in. The only chance it seemed to me of saving the man's life was amputation at the hip-joint."

"At night, by the light of a few candles, the operation was done. The anesthetic was given by the hospital cook, a private of cavalry. The hospital steward, recently appointed, fainted at the first stab of the knife, was shoved under a bed and left to come to in his own good time. A patient in the ward, a cavalry private, crawled out of bed, told me he had worked in a drug store before enlisting and offered to help, he did very well, and the disarticulation was soon completed. The patient died before daybreak."

"During my two years at Fort Washakie, I did quite a little surgery, especially amputations for frost-bites, and to my surprise the operative wound healed uniformerly by first intention. I believe this was due to the fact that no pathogenic organisms had been introduced and that though I was surgically dirty, I couldn't infect my cases. I do not remember ever having seen any pus all the time I was at that station" (1). The Spanish-American War contributed nothing to the advancement of prosthesis or amputation.

Toward the end of the nineteenth century a new term was used—cineplastic. "A cineplastic amputation is one in which a stump is created, and in addition the muscle power of a certain individual muscle, or muscles, in the stump is made use of independent of the general movements of the stump itself" (11). This individual muscle power is used to inactivate especially constructed prostheses for the upper extremity.

The idea of cinematization was conceived by the surgeon Vanghetti following his experiences in the Italian-Abyssinian War (1897-8). During this conflict the Abyssinians cut off the left hand at the wrist of Italians suspected of treason. Vanghetti observed that the muscles of the forearm remained intact and functioned. He then studied the possibility of employing these muscles as the motivating force for a prosthesis. After much experimental surgery on animals, especially chickens, he attempted to apply his results to human beings. The first human operation was performed by Ceci of Pisa, surgeon and friend of Vanghetti (1900). Other continental European surgeons carried on this work. Among these were Sauerbrück in Germany and De Francesco and Galleozzi in Italy.

Twentieth Century

The new century was to place the problem of amputation and prosthesis in a new perspective. Functional value of stumps was to be considered with much concern. Prior to this century the sites of election were poorly chosen. In many instances nature did the choosing by forming a line of demarcation. Methods were found which demonstrated that better stumps resulted when less soft parts are left in the stump. Better procedures for treating the bone end and its periosteum were devised.

The prosthetic artisan excelled the surgeon in finished technique by his service to the amputee. The surgeon was satisfied with the healing of the stump and discharging the patient. When this was done the surgeon complimented himself on his success. The patient waited until the stump diminished in size and then went to an artificial leg-fitter. Little or no personal contact occurred between the surgeon who removed an injured extremity and the prosthetist who applied an artificial limb. Today the prosthetist dictates to the surgeon. He recommends for consideration the amputation sites. Very often they are superior to the recommendations in surgical text-books.

The war years of 1914-18 showed that the European nations were behind America in the development of appropriate false limbs (6). Wounds of bones and joints were very numerous and severe. The number of amputations in the A.E.F. were 4,403 (1); the British forces suffered 42,000; the total amputations in all the armies of Europe approximated 100,000 (6). The majority of these men were restored to functional usefulness. This was one of the greatest surgical contributions of the war. Amputations were necessary primarily because of infections, particularly gas gangrene.

Entering the war late, the United States profited by the orthopedic experience of France and England. In this way the fitting of prostheses came under expert guidance. Soldiers who had had amputations were grouped in designated military hospitals. Here specialists gave excellent surgical care and postoperative treatment of the stump. Prosthetic fitting and instructions for its use were carried out under the supervision of the surgeon. For the first time a consulting relationship occurred between the surgeon and the prosthetist. These efforts hastened the return of the patient to society where he could resume activity in the world at peace.

Cineplastic amputation was not generally accepted before the World War. Since those years it has been revived. Major Baer and Captain Wilson of the United

States Army intensively studied this subject in Italy (1917-18) for the surgeon general. Cineplastic surgery brought about great advances and improvements in artificial arms from a technical aspect. Many of these contrivances have become very complicated.

The most commonly used artificial mechanical arm is the Carne's arm. Steindler agrees with the belief that the usefulness of a simple nonmovable appliance is much better than complex ones. "Plain hooks, split hooks, claw hooks, spade and shovel grips and tool holders of various designs are much more useful for manual labor than any mechanical hand" (19). By employing these types of appliances a functional upper extremity results which is of assistance in performing gainful manual labor.

The Present Era

Modern industry, the automobile, and the airplane in America cause more annual amputations than our soldiers suffered in the war. An estimation of the number of persons in the United States wearing artificial extremities approaches three-fourths million (6). To this number is added several thousands each year. With so many people concerned, the necessity for serious consideration of this topic is obvious. Studies of this matter have demonstrated a decided difference between antiquated and modern conceptions of prosthesis.

In previous years, prosthesis merely implied the supplying of an artificial leg or arm. Today it demands the applying of a limb in order to return the patient to a useful social and economic life. The amputee is no longer discharged when his wound has healed. The doctor and limb-maker are concerned with assisting each other in securing functional efficiency from an artificial limb for the greatest benefit to the patient. Thus an individual, who, in past years, was considered a social liability, can now find his proper place in the maze of life.

(To be continued)

LEFT-SIDED COLON

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The anomaly of nonrotation of the colon is not associated with transposition of the thorax (1). The frequency of nonrotation according to Kantor (2) was 0.2 percent in a series of four thousand cases. The clinical importance is the possibility of left-sided appendicitis being mistaken for diverticulitis. As diverticulitis is treated by nonsurgical measures, not recognizing a left-sided appendicitis might easily become serious. Mayo (3) reported six cases in 1911. Smith (4) found five in a series of 1,050 autopsies. The cause is an anomaly of embryological development (5). If the small intestine reenters the abdominal cavity first, normal relations result, but if the distal or colon portion enters first, a different condition arises. As there is a prearterial and a postarterial mesentery, either the small intestine must pass into the abdomen on the right side if it goes in first, or if the colon enters first, due to the hinge-like action of the mesentery as it folds at the line of the superior mesenteric artery, nonrotation occurs. Therefore, there is no condition of partial rotation, the socalled high cecum being either an arrested development, faulty descent or adhesion of the cecum. Rotation is a process completed before the eleventh week and occurs if the small intestine enters the abdominal cavity first, by the consequent rotation of the mesentery at the superior mesenteric artery.

In an embryo of five mm., a constriction from the yolk-sac, anterior to the yolk-sac, can be recognized as the stomach, and a portion posterior, as the intestine. At first, the stomach is a simple enlargement and the intestine has no coils, but later the digestive tract grows longer and a coiling of the intestine is necessary.

As the intestine develops, it becomes a loop opposite the point of connection with the yolk-stalk, which projects anteriorly into a portion of the celomic cavity. It is contained within the umbilical cord and becomes twisted so that its lower portion lies to the left and above the upper one (6), and is thrown into numerous secondary coils, all of which are still contained within the celom of the umbilical cord. When the embryo reaches forty mm. in length, the coils rather suddenly return to the abdominal cavity, and the cecum normally is thrown over towards the right, so that it comes to lie immediately beneath the liver until about the fourth month after birth (7). As the elongation continues, the secondary coils of the small intestine become more numerous and the portion of the large intestine which projected into the umbilical celom forms a loop extending transversely across the abdominal cavity. At the time of birth, this portion of the large intestine amounts to nearly half the entire length of the colon, but after the fourth postnatal month, the sigmoid flexure becomes relatively shorter, in relation with the rest of the colon, so that the cecum is pushed downward until it lies in the right iliac fossa.

Case Report

Mrs. E. W. P., a white woman, aged fifty-nine, was first seen October 29, 1939, complaining of abdominal pain in the upper right quadrant. Her physical examination was negative except for the tenderness in the right abdomen. Wassermann test, negative; basal metabolic rate, +15. Graham dye tests showed deficient function of gallbladder, no calculi present. Gastrointestinal series were negative except for the anomaly of a left-sided colon.

The diagnosis of left-sided colon aided in this case in ruling out the possibility of chronic appendicitis; the pain before, therefore, was due entirely to the cholecystitis.

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Symposium on Neuropsychiatry

WAR NEUROSES*

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It is somewhat premature to speak at present on neuropsychiatric manifestations induced by World War II. Physical casualties coming from the combat zone are the only ones that so far are met with up to this date. It is only after the surviving soldier returns to civil life and attempts to take part in it, that a factual estimate of neuroses or psychoses can be scientifically taken into consideration. A study of veterans of the first World War is the real method of deciding whether or not observed neuropsychiatric disorders are due exclusively to a war and whether we are justified in speaking of "war neuroses" as a clinical entity.

On the other hand, there are two additional elements in a war period which cannot and should not be neglected or ignored. One is the condition of the civil population which is directly or indirectly connected with the actual combatant force, namely, parents and relatives. The other element is not less important; it also deserves serious consideration; that is, the direct effect on draftees during the waiting period between the registration as a candidate and the actual call for induction into the army. Enough material has already accumulated during the relatively short period since Pearl Harbor to examine the effect of the war on the latter two groups of humanity. One is therefore warranted in considering the possibilities of neuropsychiatric disturbances during a war in general.

The present contribution will be discussed from the following viewpoints:

1. Experience in the years following termination of World War I.
2. Direct effect of the draft period on the individuals who are actually called in for induction.
3. Direct effect of the draft period on parents and relatives of the above individuals.
4. Finally the interpretation of the neuropsychiatric phenomena observed in all individuals concerned as outlined above.

1. Experience Following First World War

Among a very large number of afflicted men who came under observation, suffering from various nerve damages and treated at various times, there were a certain number who have been under continuous treatment. This group consisted of fifty individuals who served in the front lines and happened to escape death. All of these patriots presented at the time of cessation of hostilities abroad a variety of morbid manifestations from which they are still suffering in spite of the twenty years of peace.

Twenty of this group are constantly harassed by a sense of fear. This morbid sign is evident in all their activities and in their relation to others. Fear of darkness and of being injured; fear of noises, of meeting people or crowds, and of soliciting work; fear of open spaces (agoraphobia) or of being alone in a room (monophobia). Ten individuals are constantly in a state of anxiety about their health and in a state of uncertainty. They spend their time in examining themselves and in having repeated examinations done by physicians. Another series of eight individuals complain of extreme nervousness, of irritability upon the least provocation, of difficulty in sustaining attention and concentration. Finally, the remaining twelve individuals developed mental disorders of a more serious character, particularly a deep depression which, although it improved and even disappeared for several months, nevertheless recurred many times.

The fifty individuals have been kept under observation since 1920. Their various afflictions are of such a character that they have been unable to hold positions of any kind. Some of them may obtain work, but hold positions only for a brief period because of the disturbances which incapacitate them and render them unfit for responsible positions. In some of the "depressed" cases, the patients had to be confined in special institutions, as there were several attempts at self-destruction.

All the fifty individuals married upon their return from abroad in spite of the nervous and mental disorders which were evident to themselves. The results of these marriages were disastrous: homes had to be broken up and the children with their mothers became destitute and a public charge. In all such cases it is not only the afflicted individual himself, but, what is worse, the large number of persons dependent upon him or in some way connected with him, who are the sufferers. The subject is therefore a community problem of the most serious nature.

While the neuropsychoses described in the fifty cases may occur under other circumstances in peace time, in war time all the characteristic features are especially pronounced, as the war situation strikes an unusually severe blow at one of the most deeply rooted instincts common to all living beings, namely, that of self-preservation. It sets in motion all those emotional forces that are associated with that most important instinct. In the combatants we then witness a state of anxiety which becomes more and more intense in anticipation of the menace coming from the enemy and of approaching battle. The fear and anxiety are so intense that it mobilizes and uproots all the emotional forces of the combatant. Experience shows that the dislocation of these psychic forces does not disappear easily with the disappearance of the provoking factors, but it remains in a disturbed state for a long period of time and may become permanent, as the fifty described

*Address delivered before the Medico-Legal Society at its December meeting.

cases attest. It is important to mention that such a situation occurs especially in individuals with a faulty or morbid hereditary background. The disastrous effects of a war anticipation or war situation are concrete and present factual data well known to neuropsychiatrists.

2. Effect of the Draft Period

In the present war I have had striking opportunities to observe young individuals, who up to the time of the draft occupied responsible positions in industry, the professions, and in all varieties of manual or clerical occupations. They complained of losing interest in their respective jobs, of doing poor work and in many instances obliged to decline work because of an inability to meet the requirements demanded of them. The chief obstacles are: undue irritability, restlessness, insomnia, difficulty of concentrating on any one subject, or on work, no matter how uncomplicated it may be. Some of them are obsessed by ideas of profound changes that their personalities are undergoing, and for this reason they fear mental derangement. Some have developed feelings of inferiority, basing these ideas on the fact that their "normal friends" are free from such infirmities. All such individuals are tortured by these ideas whether at work or play and as a consequence have recourse to abnormal outlets, such as excesses in every direction; use of alcohol, masturbation, excessive sexual relations, excessive use of tobacco—all of which actually intensify their psychic state besides producing disturbances in the vegetative functions. It is interesting to draw a comparison between the group of draftees afflicted with the above named disorders and the group of men free from those disorders, all of whom are called upon to meet pending identical situations. While the latter group adjusted themselves to the inevitable state of affairs, the former, being inspired with no less patriotic feeling, are helpless in their efforts to find adjustment. Of course there are deep causative factors in all such cases, but they will be discussed later in our survey. It seems that in serious and regrettable situations, such as war, a conspicuous distinction between different groups of humanity is strikingly brought forward. There are many other causative factors besides war that are apt to bring to the surface such a distinction, but the present discussion is limited only to "war" as a powerful factor.

3. The Draft Period and its Effect on Parents of the Draftees

Numerous cases continue to come under observation in both parents who are dependent on their sons for material support and parents who do not expect support. Parental love is the chief causative factor. The neuroses in all such cases vary according to the constitutional traits of the individuals. In the largest majority the effects of the draft are depression and insomnia, also marked restlessness. These conditions last unaltered until the time of induction, when the above named symptoms become decidedly intensified. They are particularly pronounced when the soldier is actually in a combat area. The uncertainty renders many parents morbid. In some cases such a state persists even after reassuring official information as to injury has reached them. There are doubtless cases in which the neurotic manifestations are mild and even totally absent, but the mere possibility of creating a neuropsychiatric condition even in a small portion of mankind is a sufficiently strong factor for the prevention of war. The experience in World War I shows that in some cases the recovery of parents was complete after their sons' return from the war zones. In some instances the trauma to their emotional makeup was so profound that even after twenty years of peace the least disturbance in their private lives brings up to the surface intolerable reactions on their psyche. This is undoubtedly the class of psychopathic personalities.

4. Interpretation of the Neuropsychiatric Phenomena Caused by War

The recognition of a neurosis occurring during a war period is important and giving it the proper interpretation is of inestimable value. Detecting and eliminating from the army men who show symptoms of a neuropsychotic character is imperative. We are not concerned here with the therapeutic care of such individuals. Much can be said of the prevention of neuroses or psychoses but this constitutes another chapter in psychiatric knowledge. Reeducation, rebuilding and reconstructing the mind constitute the basis of such a work. My sole purpose here is to indicate the psychological principles which create neuropsychiatric manifestations in the afflicted men before and during the war period.

In World War I, many Americans came back with a condition known popularly as "shell shock." A deeper study of this condition indicated that it was not the result of any direct trauma of the nervous system by the explosion of shells, but was due to an inner conflict of the affected individuals. During combat the instinct of self-preservation, which is especially strong, is confronted with another strong factor, namely, the duty of a soldier. These two forces are struggling against each other, and the mental conflict thus created exists and is trying to find some solution. Suicide and alcoholic excess are two of the solutions, and so-called shell shock is another which was frequently observed. This is nothing else than a "neurosis." In the latter condition the emotional system is particularly involved and the nervous mechanism is dependent on it for its proper functioning is unable to deal properly with the stress put on it. We observe then a change in the psyche in milder cases and a real splitting of it in pronounced cases. In both instances consciousness is reduced: one part of it remains logical, the other part illogical or primitive; it is what Janet calls, "lowering of mental level". The individual is thus unable to overcome the dissociation in his mental state.

The term "shell shock" which was in use in World War I included all varieties of psychoneurotic manifestations. Only about ten percent of the entire group kept under observation were the result of actual concussion by shell, but the largest majority were instances of emotional shock without real material damage. In them the prolonged strain and terrifying experience gradually led up to development of the psychoneurotic symptoms and in some cases to a final breakdown demonstrated by total disability; namely, the reduction or splitting of consciousness into logical and illogical, and the dissociation in the mental state mentioned

above were the result. Persistent anxiety, fears of all sorts, crises of crying, disinterestedness, depression and unsociability were all present. Furthermore, the experience in the first World War with observations of many years' standing showed conclusively that these neuroses or psychoses were particularly in evidence in individuals with a neuropathic or psychopathic make-up. This knowledge is of great value at the time of conscription for military service.

Neuropathic individuals are unsuitable for military service. Inquiry made into the domestic, social, behavioristic and emotional life of such individuals will reveal abnormalities in their reasoning faculties and emotional make-up. They are failures, they cannot make a success in life, they have a distorted outlook on the realities of life. Unconsciously they develop pathological fears, phobias, fixed ideas, obsessions, states of anxiety, depression, sense of inferiority, extreme timidity, mysticism, and strong superstition. They fear responsibility; they lack in critical capacity and therefore are unable to control emotional situations by their intellect.

In the present war we observe the same phenomena not only in the draftees who anticipate induction into the army which means to them exposure to danger, but also in their relatives who are in constant states of anxiety over the future of their sons and brothers. In them also latent psychoneurotic characteristics are likely to come to the surface and become intensified if the uncertainty and anxiety continue for any length of time.

The term "neurosis" implies therefore an illness caused chiefly psychologically by environmental impacts when the basis of the disorder is a constitutionally poor make-up. When the individual is of such a type, abnormal manifestations are fundamentally the result of some unconscious cravings and are a reproduction of repressed experiences by substituting as a compromise solution indifferent images for the inhibited ones. Consequently his relations with people become unnatural. Deficiency of personality and intellect is conspicuous.

Summary and Conclusions

The actual experience with psychoneurotic individuals during and especially long after the first World War has been presented and discussed from the viewpoint of cause and effect. In the present war, special emphasis is laid on the draftees and their parents, all anticipating a dangerous situation. The relation of their state of mind to their emotional forces is pointed out to explain the neuroses from which they are still suffering. Considerable stress is laid on the influence of abnormal personality characteristics and hereditary factors. Attention is also called to the urgent necessity of radical discrimination of fit and unfit individuals for military duty at the time of induction of men in the army. Finally, a definition is presented of psychoneuroses as the result or solution in the struggle between conscious and unconscious forces.

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THE PSYCHOTIC PATIENT AND HIS INDUCTION INTO THE ARMY*

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I have always felt that the physician in general practice, but more particularly the psychiatrist or mental hygienist, whether he likes it or not, in addition to his attempt to heal or improve the patient's ailment or symptoms, must frequently also assume the rôle of adviser concerning his client's private life, occupation and various relationships. The war and the establishment of conscription have brought us new duties and I wish to report my own way of solving the problems of a number of patients whose mental state conflicted with military obligations. Probably because of the novelty of the subject in its initial phase I had seen no contribution of other colleagues as to their manner of handling similar conditions and I was eager to learn their methods, when, some time ago, I received the following letter from the National Committee for Mental Hygiene:

"It has been suggested to the National Committee that it bring to the attention of neurologists and psychiatrists in private practice the serious danger to which many psychiatric patients are exposed by induction into the Army and the potential danger of their disturbance to the morale of soldiers with whom they are associated. You are certainly aware of this and probably have attempted to solve the problem.

"It is suggested that, if you have present or former patients who are facing military selection and whom you know to have personality difficulties reflected in neuroses, psychoneuroses, or psychotic behavior, and for whom your considered judgment raises a real question as to their ability to maintain their present emotional balance or usefulness for military service, you take such steps as you deem ethical and effective to forestall induction. It would, of course, be most desirable if the patient could be induced to accept professional advice in this matter and be protected from traumatic experiences during selection for army life. Some physicians felt that they were justified in going even further than this in protecting certain patients.

"In one state the psychiatrist writes to the medical officer of the State Selective Service office stating that John Doe has been a patient diagnosed so and so. The medical officer then writes the local board to the effect that, from satisfactory evidence in hand, the registrant is unsuitable and is to be classified IV-F. This procedure protects the physician and forestalls an examination and upsetting diagnosis. One physician writes regularly in such cases: 'I have material that would be of interest to your board in case John Doe comes before it for consideration.' In larger cities where there is a chief medical officer for Selective Service, communications should be addressed to him rather than to the state office.

"We should appreciate your reaction to this or sug-

*Paper read before the Association for the Advancement of Psychotherapy.

gestions that may be useful in coping with this problem; and in the event that you have worked out a formula for dealing with any individual patients which you have found productive of results, we would appreciate having you give us the details of your procedure in the way you have handled the matter."

How are we to know what to do? The experience of the last World War cannot help us much in the choice of the mental patients to be rejected for military service, and for these reasons: The examiners of those days were more interested in mental deficiency than in psychosis proper, and the knowledge of mental diseases and the understanding of abnormal thinking acquired by psychiatry within the last twenty-five years are by far superior to what they were a generation ago.

The reaction of physicians who are not sufficiently familiar with mental troubles, after reading the foregoing letter, might be that there is no problem. Will the proper recruiting doctors not examine the patient? Will they not diagnose his case and discover his disturbance? Will they not refuse to accept him for military service if he is found to be mentally ill?

This seems clear and logical if we think in terms of physical ailments or symptoms, such as pulmonary tuberculosis, cardiac disorders, paralyzed limbs as a result of poliomyelitis, and high blood pressure, although even there some difficulties may arise, due to differences of opinion, to variability of the signs or to the enforced rapidity of the examination. Take hypertension, for example, where the boundary between normal and abnormal in young persons is set at 150 systolic pressure by the medicomilitary authorities. Is it certain that 145 may not be conducive to disability in some men of twenty-one, or that 155 may ever result in discomfort in other men of the same age? And is it always easy to prove the existence of angina pectoris in spite of the patient's symptoms, the doctor's direct examination, and the use of the cardiograph?

But mental disease is not always easy to diagnose—even to the extent of stating with certainty whether an abnormal condition exists at all in a given case. A decision is even more difficult to reach in incipient or slightly psychotic cases, the transitional forms between health and disease, or, to be more exact, between adequacy and maladjustment. This, however, should not be interpreted to mean that cases which cannot easily be differentiated from the normal or more or less normal, are of little significance. First, they may appear to be slight, but may contain the seeds for bad and complicated diseases, which may flare up at any time in the future. Second, we often do not know when, under what circumstances, the condition may change into serious trouble, which would upset, not only the individual in question, but also his immediate environment.

These are the cases in which I am particularly interested and which I shall principally discuss here. They are also those which should attract the special consideration of draft and military doctors or to which we, the civilian physicians, should endeavor to draw their attention. It is these cases which frequently require the longest study and observation, which, as a rule, only the private psychiatrist can afford. They also demand at least a modicum of the patient's confidence in the doctor and this is out of the question within a brief meeting or session, as is accorded during the induction period. On the contrary, mingled with the examination given by the medical recruiting men there is a good deal of mutual suspicion, which is in the nature of that peculiar situation. This may be so because of the conduct of the candidates who want to be excused or to stay out of the Army, or of the behavior of those who try to be admitted at all costs, or again simply because of the mental abnormality of the conscript. After all, within the short interview allotted to him, the recruiting physician confronted with a possible psychotic, can judge only or mainly by the speech or demeanor of the person at that moment.

The information of the civilian psychiatrist who knows the patient would be of tremendous value, if it were believed, if his sincerity were not doubted, if his probity were not suspected. While so far I have had no unpleasant experience in this regard, it seems that others have had. But our profession is supposed to harbor some heroism and we should, I believe, have the courage to face distrust, if need be, for the sake of both causes to which we are devoted: the efficiency of our Army and the welfare of our patient. We must submit our impression, invited or uninvited, in a particular case, because we are aware how much harm or good, both for the patient and the Army, depends upon our silence or outspokenness.

If there were any need of showing that a great responsibility rests upon the shoulders of the psychiatrists, the following passage from a circular, released as of May 1941 by the Selective Service System, Washington, D.C., and addressed to draft doctors only, should be of great interest:

"The military forces can use persons with many varieties of temperament and experience, but there is no place in an efficient Army for the psychopath, the feebleminded or the insane. Many persons so unfortunately affected *may do quite well in civil life* in accustomed jobs and in familiar circumstances, but when they are introduced into the unfamiliar environment of military life, with its necessary regimentation, close contact with other persons, separation from their families and inability to escape without fear of grave penalties, they develop various types of mental disorder. These individuals then become a source of trouble to their superiors, exert a deleterious influence on their associates, and occupy a disproportionate amount of hospital space. The experience of the last World War showed that *mental disorder in soldiers was one of the main problems* present both in the United States and in the Expeditionary Forces."

Which then, are the psychotic cases to be unconditionally rejected from military service?

Not to speak of the advanced, well developed, chronic mental diseases which may be recognizable even by the layman, I believe that conscripts suffering from lighter forms of psychoneurosis, hysteria, dementia præcox and various kinds of paranoia should never be admitted.

In addition to these, the following conditions contained in the list given by the Surgeon General of the Army to medical officers examining applicants for induction, might be causes for rejection: The large, but ill defined groups of "psychopathic personality disorders" and the "major abnormalities of mood".

But these latter troubles, in our opinion, bad as they may be, are also seen in patients who are able to adjust themselves to environment. They must be left,

therefore, to the judgment and discretion of the examiner who will have to decide from case to case and according to the gravity of the case. This presupposes, of course, a good deal of skill and experience on the part of the doctor in question. It will also require much time and concentration in order to avoid at least the most flagrant errors.

Some typical examples, taken from actual life, as many as are compatible with the brief time at my disposal, will illustrate my point.

Let me begin with the cases about whose military status this examiner had not been informed and where he had no opportunity to intervene at all.

A boy of twenty-three, who asserted that he had been first in jail—I had my doubts about that—for having assaulted a policeman, and then in a psychopathic hospital, was out on parole and under the observation of my mental clinic. He was between normal and abnormal. Extremely tall, very large and well built, he was physically powerful. He boasted of his performances in a sort of semi-underworld in which he had spent his adolescence. Some of his claims may have been true, others were surely exaggerated. But now, under our influence, he wished to "go straight" and really behave. He found a job and worked, to the satisfaction of both his family and himself. At the beginning he still had attacks in which he had to make an effort to refrain from some violence. For instance, once, during an interview, or rather one of the psychotherapeutic sessions, he was constantly turning his head to his right shoulder, while his face was full of anger. When asked why he was doing that, his answer was:

"I'd like to smash your face, but . . ." "There is something there, behind, that keeps me from doing it."

Can one imagine the feelings of the examiner, a rather short, intellectual man, in the presence of this irate giant? Of course, one had to be brave and try to be, or at least to look, cool. But there was no real danger. The man was laboring under an inhibition caused by some hallucination, some false vision behind his back. This in turn originated in his own mind and was due to his respect for the doctor and to the friendship the latter had shown him.

Such incidents, however, became rarer and rarer and finally disappeared altogether and the patient was regarded as cured. In fact, he was completely well and functioning satisfactorily for a whole year until he was called to the Army. Then he broke down and began to shake with fear. This model of muscular robustness, this towering figure, was now a weak person, a helpless creature, hiding in corners, incapable of exerting his will power and, naturally, unable to cooperate. He was discharged, of course, his diagnosis being correctly designated as dementia præcox, and he returned to the Clinic in a much worse condition than when he had left it.

Another young man was entirely unknown to me until his discharge from the Army, when he came to my Clinic with a card upon which the diagnosis of psychoneurosis was stated and the information given that he had been sent to St. Elizabeths Hospital, Washington, D. C., all of which, by the way, is bad tactics, as it results in great difficulty for the patient to find employment, most employers asking for that card. He emerged improved, but not entirely well. My Clinic seemed to have helped him, as his mental health, at least for the time being, is adequate. With some maneuvering he was even able to find work at his trade, where apparently he is as efficient and well liked as the next worker.

There is no doubt in my mind that in both these cases a big blunder was committed and that this could have been forseen.

Now we come to two cases of young men known to me before induction, or rather voluntary enlistment, as they insisted that they wished to serve. In both these cases I wrote to the respective boards telling them that these two men, psychotic patients of mine, were about to appear before them and, while not desiring to influence the doctors' opinions, I wished to call their attention to the mental problems of these particular patients. I stated my belief that they were entirely unfit for the Army and would be unfavorable elements in any group. The result was unexpected and disappointing: polite replies over the telephone, with many thanks, but with the unfortunate determination to try the men out in the service. The outcome was deplorable.

One is a talented young man with literary ambitions who, upon coming to a military camp, was happy to be given a responsible job in the commissary department. But his schizophrenic tendencies were not long in reappearing and they came in full force. He had to be sent to the military psychopathic hospital and later was discharged. It took us at least six months to bring him back to his previous, comparatively healthy, state.

The other man, a manic depressive, depressed type, was a good and disciplined soldier who complained of nothing, but was very moody, and as soon as his duties were over, would sit in a corner and brood. He participated in none of the amusements. When asked what was the matter, he answered—that is, after long coaxing—"I'm OK." Anybody persecuting him? "No, I do as I'm told." Have you been well treated? "Yes." He was clearly unhappy and deeply upset and his example was undoubtedly contagious. There was no disappointment in love, nor homesickness. This information was given to me by two members of his family who visited him in camp. Later, in New York, after his discharge, he behaved in much the same way, but was even more reserved and reticent. He sat at home the whole day and would not go out. He was inactive, sat staring at the floor, eating only when almost forced to, and he became pale and weak. After a few conversations with the psychiatrist some improvement was seen, after which the progress was rapid.

And here are cases of men who were fortunately saved from the Army through my efforts by the simple means of a statement to the effect that I knew the patient and that he was unfit to serve. Incidentally, I also saved the Army from these psychotics.

This man was an Italian, short, illiterate, but intelligent, in several ways ascetic, afraid of people, having obsessions and compulsions which seemed ridiculous to others but about which he was extremely in earnest and to which he clung obstinately. The explanation, into which I shall not go here, is a long one and was to be found in his upbringing and childhood, and had much to do with various sexual inhibitions and conflicts between his homosexual trends and his attachment to an old aunt. He was never certain whether he was a real he-man and whether his actions were "manly" enough or as "moral" as he wanted them to be. He masturbated much and never felt guilty on that

account, as others do. Masturbation, on the contrary, was his only proof to himself that, after all, he "was a man". He had concocted some ideas which could not be eradicated: heterosexual intercourse was bad and unmanly, since it inextricably mixes the male elements with the female; he might involuntarily attack children, although he never did; he once had an opportunity to copulate with a girl, but the thought about his aunt interfered—his aunt with whom he had often slept as a child, and whose contact had always been "a cure for a bellyache"; the uvula in his throat was a clitoris; his aunt's fingers looked like male organs to him; if he masturbated on a certain Catholic holiday he was sure to continue daily for ninety days; when being acquainted with a man for the first time, he could not help thinking, "Would I make a good wife to him?" although he fought this thought "with all his might"; blood transfusion was not acceptable to him, because a man's blood "would make him homosexual"; he had to touch several points on his face and shoulders every five minutes—and so on and so forth. Notwithstanding his defects, at the first glance this man, being able to hide his difficulties, looked normal. He had a job, earned a living and supported some of his relatives. But each time he was disturbed from his customary surroundings he broke down and began to walk the streets aimlessly.

Another case is that of a boy whose childhood history, when carefully reconstructed, shows an acute encephalitic attack at six, which transformed him mentally completely. He had to re-learn his speech, his walk and many other functions and abilities in which he had been proficient. Moreover, he, the bright child in whom his parents were all wrapped up and around whom they had woven their ambitious dreams, was now dull and nonteachable. As he grew older, he carried along, as a great handicap, the fact that he was an only and very spoiled boy. He was pushed through school with help from parents and from tutors. He was perfectly aware of his inferiority and shortcomings and expected other boys to make fun of him. He, therefore, behaved as if they actually did, when they never thought of doing so, or ignored him entirely. This self-consciousness and suggestiveness worked like a vicious circle and he finally did bring down upon himself the derision which cruel youth enjoys so much. He longed to be sociable, but in society, in games, at dances, even in places where he was unknown, he managed to become the butt of ridicule. He was, of course, unable to study and work, although at the first appearance he made an excellent impression, being always calm, sedate, decently dressed. No one could guess his difficulties without digging into his personality.

The next man was a fine accountant and worked for a firm when free from his most spectacular and annoying symptoms. Psychiatrists failed to agree as to the diagnosis in his case because sometimes he seemed to incline to schizophrenia and at other times to cyclothymia. When at his worst he wandered around not knowing where he was going and why; twice he went abroad without having any business there and without seeing anything, once to Europe and once to Vancouver only to take the next train or boat back; he bought magazines and books, but never looked at them and threw them into the nearest garbage cans; he felt miserable, wept abundantly, saw life as futile, tolerated nobody, was always "pent up", had a definite feeling of unreality, saw "a barrier between him and everybody else", "could not break through the shell" and it was "tough to be cut off from the rest of the world"; afraid of bridges and subways and "may choke, not being able to swallow"; therefore carrying a wet sponge in his pocket; easily offended, irascible, provoked fights and was regularly licked. After a few months of such difficulties he would improve and function normally for the next half year or so, worked either for an employer or as a free lance, only to break down again in the old way.

A civil engineer, who once had an automobile accident during which absolutely nothing except the scare happened to him, was a different person from that day on. It is a condition that I call nosophrenia. He had all sorts of anxieties and refused to do any work whatsoever. Years passed and no amelioration was coming until he had a long course of treatment in the form of psychotherapy after which a conditional change occurred. Under certain circumstances and as long as everything in his life ran smoothly, he was well and capable of following his occupation. As soon as he learned that the men to be inducted must go to Governor's Island, near New York, for examination, and that he too might eventually have to do the same thing, he was wild with fear, not so much because of having to face the draft, but because of the necessity to go to an island, that is, an isolated, closed up place. Some of his previous fears also came back. For instance, he would not ride in an elevator and had to walk up the stairs to his room situated on the tenth floor.

A jeweler was afraid of high places, whether they were hilly streets or apartments above the second floor, and, as he worked independently and had to go to customers' houses to solicit jobs, he often refused business and neglected his trade. There were, of course, in his life, powerful causes for this anxiety, but the fact is that he was never entirely adjusted. He also suffered from paranoid-persecutory ideas. When under a doctor's guidance he dared to disregard his fear, but he would certainly have remained unadapted to military life, where his condition was bound to become worse.

These and other men were spared the horrors of mental complications in the Army service by full descriptions handed to them or to their families in papers titled "Certificate" or "To Whom It May Concern," for delivery to the proper authorities. In one case the information regarding the patient's mental condition was given by means of a letter addressed to the father of the patient about to be inducted.

Sometimes one is puzzled at the ease with which the Medical Corps rejects a conscript. I have never understood, for instance, why a physically and mentally sound man of twenty-seven, who came to see me following his Army examination, was refused induction, although he desired it very much. This is, I hope, a rare exception. The reasons given, after inquiry, were flimsy. This man was self-supporting, perfectly adjusted, and happy. Being a recently naturalized foreigner and living and working among his own people, his English was far from good and he, therefore, spoke slowly, haltingly, hesitatingly. He was timid, but not more than many normal or average persons. He had had only few sexual experiences. He was, however, in love with a girl who lived out of town and whom he could see

but rarely. He never smoked or drank. That was all. The military examiners believed this candidate to be unfit because he was "not man enough". Unbelievable, but true. This scared him and made him think that there was "something the matter with him."

There are anxiety, compulsion and manic cases for which Army life might be a cure, temporary or permanent. In all the lighter cases, where the difficulties have never been great and where the patient is willing and eager to serve, and in all the cases where adjustment has existed for a very long time, the patients would probably benefit by the change. Here and there we might meet with disappointment, but so rarely that the risk is worth while. The same thing may be said about many irregular or emotional or overactive personalities, those with neurotic traits, many neurasthenic individuals, those with conduct disturbances, and some of the lesser drug addicts, provided that, in all of them, there is no developed psychosis. Many unadjusted persons, with unhappy homes, will do well in the Army, sometimes because attention is paid to them, sometimes because they are not discriminated against and no special solicitude is shown to them, or frequently for the simple reason that they are away from a hated person, a hated relative or a hated home. The Army, for them, may unite both adventure and ordered life, for which most people yearn at the same time. To many it means giving up worries to a superior body, the Army, at the price of some liberty which they may not have known how to use anyhow.

Most laymen have the erroneous idea that once a psychopath always a psychopath and that whoever is queer or unusual or is afflicted with abnormal habits, is doomed. They do not notice that all around them there are people who are somewhat abnormal and yet work and produce, are useful and often agreeable and acceptable to their surroundings. Any psychiatrist can point to a number of ex-patients whose condition is so fine that it amounts to a cure—and instances of some celebrated persons may be cited in this respect.

Patients who are hampered by their civilian environment may be helped by military society. That is why the parents of the slow, lazy and indolent boy who never played, who was uninterested in anything except to eat, wear fine clothes and visit the movies, were advised to let him be inducted. He used to read good books, masturbated, was his folks' parasite and under one excuse or another, never worked. Now he is a soldier, is doing well and struts about in his uniform with a certain pride.

The same thing is to be said about the man of twenty-five who claimed that at eight he was sick with "rheumatic fever" and, therefore, was in all these years afraid of walking fast, or running, jumping, dancing, playing, although every physician he had seen for the last ten years told him he was entirely healthy. He had a sedentary job and came to ask me whether I would not give him a "letter" which might help his exemption from the Army. His visit had the opposite effect. After a long explanation I persuaded him to accept the decision of the Board. Now he is almost a veteran and writes me letters full of gratitude.

The boy who will not look for employment because he might have been a college man and a professional person and therefore none of the ordinary jobs are good enough for him; who claims to be unhappy because of the contrast between his potential greatness and his actual low position in society; who says that he hates life but takes good care of himself—this boy is in great need of some enforced discipline which may be found in the Army only.

The personality of the man who started by suffering from insomnia and later became an extreme barbiturate fiend, with spells of incoherence in speech and quarrelsomeness, and an all-around nuisance, has also undergone a metamorphosis and transfiguration since he entered the Army.

So have the neurotics who, without any valid reason, were sure to have syphilis or, in their ignorance, were afflicted with "cancer of the whole body", somewhat like measles. So has the individual who, although his gonorrhea had long been entirely cured, failed to believe anyone but himself, that his organ was not affected with it. So has the fellow who used to bewail his fate because of the socalled "smallness" of his penis.

The Army, to which I sent the patient who attempted suicide because he had a slight, almost non-apparent, scoliosis of the lower spine, has cured his wrong thoughts. And it has worked a miracle in the case of the bank clerk, who unconvincingly complained of various aches and pains, who was sure to be weak and to have a kidney disease because his brother had had a nephrectomy performed. Great benefit resulted through the induction of the young man who was still his widowed and domineering mother's baby, who did not know that overprotection and oversolicitude had destroyed his initiative, had made a failure of him, and who constantly "feared insanity".

Much good was also derived from Army life by an insurance employee who had climbed up the scale in the company and became some sort of a superior, only to see himself outdone and outranked by a competitor with a greater "pull." He became depressed and dizzy, lost his "pep and energy", as he said, discontinued his occupation and gave up all his interests and enjoyments before he entered the service.

And now the last and most "miraculous" case.

Four years ago I saw a boy of seventeen, a High School student, who, upon learning in biology something about the difference in the general make-up between the male and female body, suddenly became aware of his own appearance. And lo and behold, he was badly dissatisfied and greatly disappointed. He "looked like a girl", he complained, even though his body hair was normally distributed and of masculine type, as far as could be expected at his age, and a beginning of beard growth was easily visible. But this blond boy had a mild, poetic, dreamy, contemplative face, which made him appear younger than he was. His height was adequate, his weight somewhat below what it should have been, his square bony frame was shaped according to the male form. His genitals were normal. However, he had decided that he had feminine characteristics and nothing could sway him from that belief. Undoubtedly within his mind, regarding his sexuality, there was a tendency that made it necessary for him to be a girl rather than a boy. In fact, he ceased playing in his old boyish way and adopted female or girlish manners. This, of course, gave his unfriendly teasers a good excuse to mock him and call him "sissy" and other names, which convinced him even more that he was right. He had not yet heard about homosexuality and his sexual

feelings were too vague to be directed anywhere. But he was inclined to that aberration and would have been headed toward it, had he met any homosexual person clever enough to take advantage of him. In this case there was also probably less danger that the situation might have degenerated into sexual irregularity, for the reason that his personality was schizoid, and he was not annoyed, as other youngsters of his age are, by any real sexual desires. He closed himself up at home and, ashamed of his "looks", discontinued going out and even attending school. He would see no one outside the members of his family. He was extremely unhappy and depressed. Doctors could not help him, because he refused to cooperate with them. Taken by his parents to a few at first, he soon ceased to visit them altogether. Bad as the condition was, it never developed into a true psychosis, or it had no time to do so, at least until conscription came.

The boy trembled at the idea of being undressed and examined, and of entering a military unit where he would be closely observed and probably ridiculed. How amazed, however, was he when he soon quieted down, accepted himself as he was and also accepted the situation in a natural way and made a healthy soldier, without obsessions of any kind! He slept and ate well and had no symptoms to complain about.

Conclusion

The doctor's loyalty is not divided between two duties. It is double—the same toward his patient as toward his nation. On the one hand, as members and citizens of a country which is bending all its energies in a gigantic task, we wish to do our small but extremely important share. On the other hand, we cannot and must not betray the trust with which so many unfortunates come to us. Let us accomplish both duties to the best of our ability and knowledge.

Discussion

DR. JOSEPH WILDER: I rather like the form which Dr. Liber has adopted for his lecture tonight. It is interesting and devoid of too much theory, so that the doctors who do not specialize in psychiatry and who are present here can learn more than from a purely theoretical speech. My only objection would be that from my point of view, a psychiatric consultant to the Selective Service, I would be more careful in accepting into the Army patients who suffer from neurosis. I would be afraid to cause Uncle Sam to waste much money without any profit. It is said that each pensioned soldier costs twenty-seven thousand dollars. While examining these cases as if precious jewels are passing through my hands and I am not in the habit of handling such high sums. I would make an exception for the anxiety neurotics who seem to behave correctly in war time generally and in battle particularly. Dr. Liber failed to mention the homosexuals in connection with the Army. I would not know how to recognize them objectively. All in all we should not treat the Army as a sanatorium where mental patients are sent for improvement or healing.

(Continued on page 175)

TONSILLECTOMY AND POLIOMYELITIS

A New Concept of Etiological Relationship

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Since 1910 there have been repeated references and case reports in the literature suggestive of the possible etiological relationship between tonsillectomy and poliomyelitis (1, a to j). The latest and perhaps the most interesting was the report of Krill and Toomey (1, j) of five cases in one family, in which a severe bulbar type of poliomyelitis developed within two weeks following simultaneous tonsillectomy, resulting in three deaths. The sixth and youngest member of the family, a two and one-half year old boy who had not been operated upon, escaped the disease although constantly in contact with the other patients.

In a subsequent study by Francis, Krill, Toomey and Mack (2) an elaborate epidemiological investigation of these same cases was made in an effort to track down all possible contacts and correlate predisposing factors. Stools from nine related adults, twelve related children, twenty-eight playmates, the surgeon, the anesthetist and three nurses were tested for virus, as were also samples of dust, water and flies from the immediate environment. Of the stools tested, those of the healthy brother and six cousins were found to be positive, as was also a pooled specimen from three playmates. No virus was found in the stools of the nine related adults, including the father and mother. All tests on extrahuman material, including the flies, were negative. The authors concluded that, aside from the obvious precipitating influence of the operative procedures, the results indicated a "closer association than ordinary contact" in the development of the disease.

In these cases, as in most of those previously reported, increased susceptibility is implied by reason of the traumatic influence of the operative procedure in predisposing to local invasion of the virus. The predominant incidence of the bulbar type of the disease in such cases is thought to lend support to this theory, on the assumption that the denuded operational area would favor virus involvement of exposed nerve filaments and consequent extension to associated nerve centers. This assumption is in turn based on the further assumption of the hypothetical "portal of entry" in human beings as compared with the experimental disease in laboratory animals, the implications of which are still shrouded in mystery. Sabin (3) was unable to infect tonsillectomized monkeys by painting virus over the areas of operation. Toomey and Krill (4) removed the tonsils of six monkeys and then flooded the denuded areas with ten percent virus suspension for five days with negative results.

There are, however, two intimate angles of approach to the solution of this problem which apparently have not yet been explored; first, the possible relationship of the basic hypertrophy of tonsils, adenoids and other lymphatic structures predicating the

operative procedures; second, the possible predisposing effect of the surgical anesthesia.

The Underlying Adenopathy

It has long been recognized that a rather general lymphatic hypertrophy is frequently associated with poliomyelitis. The characteristic mesodermal-glial response, as manifested in lymphatic pleocytosis of cerebrospinal fluid and perivascular lymphocytic infiltration, may be related to such involvement. Howe and Bodian (5) intimate the possibility that the general lymphocytic reaction in poliomyelitis may be a protective response of the organism, and that the elimination of large numbers of lymphocytes in the intestine may be a means of eliminating the virus during convalescence. The fact that other degenerative diseases of the nervous system, including neurosyphilis, encephalitis, spinal sclerosis, beriberi, etc., are accompanied by a somewhat similar lymphatic reaction would seem to indicate that it is related to the degeneration of nerve tissue generally rather than being a specific response to poliomyelitis. The recent reporting (6) of lymphatic pleocytosis and increase in protein content of the spinal fluid, in a case of oxygen deprivation resulting from carbon monoxide poisoning, gives support to this conception, and suggests the hypothesis that this mesodermal-glial response may in reality be the inception of a reparative reaction to the disintegration of nerve tissue, the differentiation of the extravasated lymphocytes serving, perhaps, to lay the groundwork for the formation of neuroglia for the repair of the breach.

The work of Stuckey (7) in observing the effect of nutritional deficiency on the lymphatic system may give us a more definite clue to a possible relationship. He examined a large group of children from the Kentucky mountains, many of whom had enlargement of tonsils, adenoids and lymph glands. Their diet consisted mostly of white bread, margarine, boiled potatoes and root vegetables, with tea, coffee and soft drinks, and little or no milk, eggs, fresh fruits or green vegetables—an obviously deficient diet, lacking mostly the B vitamins. In most of these cases the lymphatic hypertrophy was found to be amenable to nutritional correction without resort to surgery.

On this same basis the lymphatic reaction in poliomyelitis may serve as an index of vitamin B deficiency, which, according to the author's hypothesis (8, 9, 10), may be an etiological factor in this disease; and may thus be regarded as a reparative response to the destructive action of such deficiency. It would, therefore, be logical to expect that most of the tonsillectomy-poliomyelitis cases would be found in this deficiency group.

A recent survey of Toronto's 1937 poliomyelitis cases by Lewis Duncan, K.C., vice-chairman of the local municipal control board, disclosed the fact that among fifty thousand of the city's population on relief diet at that time there were 184 cases of the disease—a ratio of 3.68 per thousand; whereas, in the remaining population of six hundred thousand there were only 562 cases—a ratio of .94 per thousand. It will thus be seen that the incidence of the disease was four times greater in the lower nutritional level. In connection with the Duncan survey a questionnaire was sent to the parents of the 184 patients on relief diet, to which replies were received from ninety-nine. In practically every case the dietary intake of vitamin B_1 was found to be much below the minimal protective requirement. Further unsolicited information was obtained to the effect that in six of the cases the disease set in shortly after surgical procedures. Three of these were tonsillectomy cases, and the other three were mastoidotomy, appendectomy and teeth extraction under gas. It is not surprising to find tonsillectomy predominating in this type of cases, since it is the operation of major incidence among children in modern times. In two of the tonsillectomy cases and in the appendectomy case the bulbar type of poliomyelitis developed, while in the remaining cases the disease was of the spinal type. The usual explanation of the relatively high incidence of bulbar paralysis in the post-tonsillectomy cases has been the anatomical relationship of the supposed invasion route along the cranial nerves. On this basis all six postoperative cases in the Duncan survey would logically have fallen under the bulbar classification, whereas three were bulbar and three spinal. Fischer, Stillerman and Marks (1, f) in their study of the Toronto, 1937, poliomyelitis cases, found that of 498 cases in the population at large twelve occurred within a month following tonsillectomy, seven of which were of the bulbar type. This would indicate a posttonsillectomy incidence rate of 2.41 percent and a bulbar rate of 1.41 percent; whereas, in the Duncan survey of cases among children on city relief diet the corresponding rates were six percent and three percent. Assuming that this same ratio prevailed in the entire relief-diet group, a total of eleven postoperative and six bulbar cases would be found in the 184 cases, or approximately the same as that found by Fischer, et al, in a general group of 498 cases representing about two-thirds of Toronto's total cases. A further analysis of these figures reveals the startling fact that less than eight percent of Toronto's total population (those on city relief diet) provided more than sixty percent of the city's total postoperative-bulbar poliomyelitis cases in the 1937 outbreak.

It would thus appear that the higher incidence of bulbar poliomyelitis in the postoperative cases may be determined, not so much from the anatomical relation of the site of operation in providing the hypothetical "portal of entry", as from the basic constitutional condition back of the operative procedure, to which is superimposed the shock of the operation and effect of the anesthetic. In other words, the bulbar involvement may be merely an index of the severity of the disease process. It is generally recognized that the more severe forms of poliomyelitis usually begin as the spinal type and then assume an ascending form, somewhat similar to Landry's type, terminating in bulbar and encephalitic invasion. In this connection it is interesting to note that a review of Laundry's original case by Brown (11) elicits evidence strongly suggestive of nutritional deficiency (B_1 avitaminosis) as the major etiological factor in this syndrome.

The Possible Relation of Anesthesia to Postoperative Poliomyelitis

All general anesthetics are known to produce more or less anoxia of the central nervous system; and in fatal anesthesia cases lesions of the brain, especially of the cortex and basal ganglia, have been observed (12,

13). Similar pathological findings have also been reported in experimental anoxia, as in altitude aeronautics and in the inhalation of oxygen-displacing gases such as nitrous oxide, carbon tetrachloride, carbon monoxide, etc. Under such conditions Girault and Richard (6) have even reported a lymphatic pleocytosis and increase in protein content of the cerebrospinal fluid—characteristic findings in poliomyelitis. The common use of barbiturates as preoperative sedatives may also contribute to cerebral anoxia, since it has been found that the use of such drugs in obstetrical cases increases the incidence of asphyxia neonatorum.

Gerard (14) has shown that the rate of tissue respiration, or oxygen requirement, in the central nervous system is about thirty times that of other body tissues. Van Liere (15) states that "of all the tissues of the body nervous tissue is the least capable of withstanding oxygen want". It is well known also that there is a lowered oxygen uptake and an increase in the lactic acid content of the tissues generally, and of the central nervous system in particular, in anoxic and vitamin B_1 deficiency states. Kinnersley and Peters (16) have found that even a small crystal of vitamin B_1 added to an in vitro preparation of fresh B_1 avitaminotic brain tissue will quickly increase its oxygen uptake. Rosenbohm (17) has found that an accumulation of thirty mg. of lactic acid per one hundred grams of brain tissue can initiate nerve cell proteolysis. Of further significance is the statement by Van Liere (15) that in severe anoxia there is produced an ascending type of paralysis. First the legs lose their power, then the arms and neck become affected, and bulbar and cerebral involvement follows. A correlation of these observations may provide a physiological explanation of the sequence of pathological changes common to beriberi, poliomyelitis and other degenerative diseases of the nervous system, and may throw new light on the possible etiological relationship of postoperative states and bulbar poliomyelitis.

In view of the foregoing it may be of interest to note that in the multiple tonsillectomy-poliomyelitis cases of Krill and Toomey (2) in four of the five familial cases the patients had teeth extracted at the same time. This would obviously prolong the anesthesia and increase the traumatic shock. Furthermore, in one of the younger patients, "B-7", who also had tooth extraction, there was considerable difficulty in dissecting out the tonsils, which woud further lengthen the period of anesthesia. It is not, perhaps, without significance that this same boy was the only one who vomited after the anesthetic, and was first to come down with poliomyelitis about a week later with abdominal pain and vomiting which persisted for several days. Two days later "M-6" came down with abdominal pain, nausea and vomiting, which also persisted for two days. About the same time "J-8" began to suffer from nausea and vomiting, which also persisted for two or more days. On the next day "R-9" took sick with "abdominal pain and vomiting", while at the same time "E-11" had "nausea and vomiting". This uniformity of onset with abdominal pain and vomiting would seem rather atypical for poliomyelitis; but, when one considers that altitude anoxia is also frequently associated with muscle cramps, nausea and vomiting, it is suggestive of the possible predisposing relationship between poliomyelitis and the anoxic effects of the surgical anesthesia. The latter may have initiated pathological changes in nerve cells which might make these same cells more susceptible to further destructive changes with the onset of poliomyelitis.

It would thus appear that neuromuscular anoxia, associated with either the nutritional status of the subject or the surgical anesthesia, or both, may be the missing link in the etiological relationship between tonsillectomy and poliomyelitis. It may indeed be the much-sought-for "closer association than ordinary contact".

The author's viewpoint, as expressed in this and previous papers regarding the possible etiological relationship between vitamin B deficiency and poliomyelitis, would not necessarily nullify the elaborate mass of research work done on the experimental invasion route of the virus; but would call for a revision of our interpretation of it on the assumption that the virus may actually be of endogenous origin—a biochemical by-product of disturbed carbohydrate metabolism (vitamin B_1 deficiency), capable of reproducing in laboratory animals a similar disease process by means of catalytic chemical action in the central nervous system. No conclusive experimental or clinical research work has apparently yet been done to exclude this possibility.

Summary

1. The literature regarding the coincidence of tonsillectomy and poliomyelitis is reviewed, with special reference to the recent multiple familial cases reported by Krill and Toomey.

2. The author raises the question of the possible etiological relationship of the basic lymphatic involvement back of the operative procedure, and the effect of the surgical anesthetic, from the viewpoints of nutritional deficiency and anoxia. Comparative incidence figures are cited from the Toronto 1937 outbreak.

3. The increased incidence of the bulbar type of poliomyelitis following tonsillectomy is regarded as an index of the severity of the disease developed under such conditions, rather than from the viewpoint of anatomical relationship to the route of virus invasion.

4. The author's viewpoint, as expressed in this and previous papers, raises the question of the possible endogenous origin of the virus and its biochemical nature.

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16 Gothic Avenue

STUTTERING

Preliminary Report on a Treatment by Correspondence

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Stutterers do not make up a very great part of the usual physician's practice but they do constitute a percentage of every medical clientele and we see a far-reaching influence among the family and associates of the stutterer.

There is scarcely a doctor who has not been brought into contact with families in which there exists functional maladjustment because one or more of its members is afflicted by this misfortune, so noticeable in daily social contact.

The economic aspects, also, are liable to bring about difficulties since the patient finds it troublesome or even impossible to secure remunerative employment and may, therefore, become a financial burden.

From personal observation we are convinced that the treatment which will be outlined here is of great value and that it should be brought to the attention of the medical profession.

We fully appreciate the magnificent work of Dr. James Sonnett Greene in his National Hospital for Speech Disorders in New York, a leader in this field. His speech clinic has made normal life possible for an impressive number who came to him incapacitated by their defect.

In the August 1942 issue of the *New York State Journal of Medicine,* Dr. Greene attributes stuttering to psychosomatic disorders and gives the opinion that those defects of the patient should be investigated and treatment directed to any abnormality whether physical or psychic. Attention should be particularly directed to the stutterer's personality. In the clinic every new patient is studied by electroencephalography, hematology and biochemistry in order to establish a possible relationship between psychic and physical conditions.

The writers of the present paper would advise any one interested in the scientific aspects of stuttering to read the contribution of Dr. Greene to which we here refer, as well as other literature on the subject. However, for a full realization of the prevalence of this disorder it should be remembered that there are about one million three hundred thousand sufferers in the United States, surely more than most of us would have imagined. The State Department of Education of Maine, making a survey of its schools, discovered that about fifteen hundred children stutter and that about five thousand are suspects or incipient stutterers.

We have, unfortunately, not realized that we may have been treating patients for psychic disorders which originated from daily contact with those who stutter. It is in behalf of the patient's family, almost as much as the patient himself, that we now call attention to a correspondence school which is giving excellent results, as demonstrated in a number of cases which we have had the opportunity of observing.

The treatment was originated in 1935 by a woman, herself a former stutterer, Mrs. Theodore Emery. Her husband, convinced of its value, was able to develop it and bring it within the financial reach of sufferers in the low income class who could not travel from their homes on distant farms or in villages to institutions for the treatment of speech disorders and to remain there for the necessary time, perhaps many months.

The method is based on the premise that there are comparatively few stutterers with physical defects preventing the normal production of vocal phonetics or the nerve influence necessary for articulation. One of the striking proofs of this assumption is, as most of us know, that stutterers speak normally when they think they are alone and, perhaps, speaking to animal pets; or when they read aloud slowly. Singing by stutterers reveals no hint of their affliction.

Assuming that this is true and that the patient real-

izes his abnormality as a means of escape he can be made to understand that everything depends on his desire to *cure himself*.

He should be informed that the distance of his home from metropolitan centers of speech-development need not prevent his self-education; it is only necessary to find a means to guide him in his effort. This is the principle of the Emery plan of teaching by correspondence. It must be emphasized that help can be given only when there is determination to help oneself. The treatment may eventually bring normal speech to thousands who feel that they can not afford the expense which a long change of residence would entail. Only those who realize what their handicap means, not only to themselves but to their friends and families, will desire to undertake this treatment which bases its success entirely upon the desire of the patients to cooperate and to educate *themselves*. It is probably because of this that in the few years of its existence the treatment has brought about such a high percentage of recoveries.

The course consists of a series of ten lessons in the form of letters written in a style so simple that even a comparatively uneducated person will understand them and will desire to carry out the instructions.

Since its origin in 1935 more than seventy patients have enrolled in the course and forty-one have completed it. The average time before the patient notes improvement is about six weeks and the usual time for a "cure" is about six months. Occasionally there are recrudescences, usually because of carelessness on the part of the pupil, but by this time he will know what to do, and, with suggestions from his instructor, the relapse is usually overcome.

In computing the number of "cures" only those who seem to have permanently regained normal speech are considered. Those who relapse are counted as failures. Some of the patients have remained normal for six years—up to the present time.

Reviewing the literature of the past decade we conclude that the results obtained by the treatment here described compare favorably with the percentage of recoveries in the clinics.[1]

Outline of Treatment

The curriculum consists of personal letters to the patient, no two of which are alike although the principles explained are identical.

The patient will read each letter and, after applying the instructions to his own case for a variable period, he will send a report of progress, together with inquiries about things he does not understand.

In the second letter by the instructor each of the patient's questions is discussed in simple language and further details of the treatment are given. These instructions are carried out and when the student believes he has mastered the problem he mails a report describing the changes he has noted in his speech and requesting further directions. The correspondence continues until the ten letters have been completed. By this time apparently normal speech should have been achieved, although a long period may have been consumed during the course.

The writers of this paper would emphasize the individual character of the correspondence as well as its informality. Teacher and pupil become acquainted and develop cordial relations. The patient learns how to study and understand his own case and to know what the instructor is driving at, the principles as well as the directions. The course finished, the patient feels that his defect has been overcome but, as in many other diseases, there may be a recrudescence. By this time, however, the reasonably intelligent stutterer should recognize the cause, such as carelessness or overconfidence, and he will probably know the remedy. If there is any doubt the instructor must be consulted and the matter straightened out by one or two informal letters.

One of us (H.L.), after going over the correspondence in ten of the cases, was fully convinced. Two patients were examined by R.S.J. The material will be found below.

A former patient conversed with one of the writers (H.L.) for about ten minutes and it was not until the observer had been driven several miles from the farm where the interview had been held that Mr. Emery informed him that the man had been a stutterer. The conversation had been on army matters, of interest to us both and neither of us understood that the interview had anything to do with the disorder. It happened that he was one of the correspondents whose letters had been studied. There had been no indication of speech irregularity during the conversation.

The reports of two cases examined by Dr. Jewett are presented.

Case I.—A young man, K.T., aged twenty-one, had stuttered since his early speaking years. He was unable to finish secondary school because of this disability. His family history was noncontributory. His past history had shown only the usual childhood diseases with no sequelæ. Physical examination revealed a well-developed man, six feet in height, weighing about 170 pounds and revealing no physical defects.

The patient began the Emery correspondence course in April, 1936. By September, in the same year, it had been completed, with marked improvement. This has steadily continued and since that time we have met him frequently on the street and in his home and have yet to hear of a return of the stuttering. His family and friends attest to this.

Case II.—D.T., a man, twenty-one years of age, had stuttered from early childhood. His family history was noncontributory. He had had the usual diseases of childhood with no sequelæ. Appendectomy and herniotomy had been performed at sixteen. Physical examination showed a fairly well-developed young man six feet two in height, weighing one hundred and sixty-three pounds. Except for a right rectus scar on his abdomen, physical examination was essentially negative.

This patient began the Emery course on January 26, 1940. There was striking and steady improvement during the first three months of the course. In January, 1941, he had regained normal speech-control almost one hundred percent. He entered military service in January of the same year and in March, two months later, addressed a sizeable gathering at one of the resort hotels with no difficulty, no one in the audience realizing that he had ever been a stutterer.

Conclusion

A treatment for stuttering is presented because of the excellent results obtained by correspondence, without residence near a speech clinic.

[1]The vocational rehabilitation division of the U.S. Office of Education, Washington, has authorized the states of Maine and Florida to use the Emery service.

Editorials

The Beveridge Plan

The Beveridge plan has caused rather marked upheavals in Britain as well as in this country. We do not propose to argue whether the plan is good or bad or to speak for or against it. As a matter of fact, some of our readers may ask why we are discussing in a medical journal a plan which primarily deals with economics but the plan is not only one for a new economic order. It deals in part with matters that concern the health of a nation and also the rôle that may be played by the physician in any nation which adopts this or any other similar plan.

While there has been distinct opposition to state medicine in this country, certain phases of social medicine, we feel, will inevitably creep into the social plans that will be made in England and in this country. We have the feeling that things are going to be different whether we like it or not. This war is not going to be terminated as abruptly as have previous wars, and there will be many extensions of wartime regulations and wartime activities long after the fighting of the war has ceased. There will be shortages of physicians in this country as well as in all other countries of the world.

Many new problems will arise when our soldiers come back from the various tropical and arctic zones in which they are fighting. The government will no doubt assume certain responsibilities towards its citizens. One of the principal points in the Beveridge plan relates to hospitalization. In England this step towards social insurance is being approached more carefully or, should we say, as a secondary consideration of the general plan. In England they feel that the raising of the living standards through better housing and employment conditions will tend to improve health standards and reduce the amount of medical care required. We are inclined to agree with their point of view; nevertheless, in this country voluntary non-profit hospitalization will undoubtedly come into existence on a rather large scale. Our impression is that little will be gained by combatting this trend and many others that will eventually shape themselves but rather to see that they are put on a constructive basis where the majority of the community will benefit.

Nutrition Nowadays

At the present time, when most of the civilized nations are engaged in thinking out and employing methods of destruction, the matter of construction has fallen into the background. Nutrition is a form of construction which cannot be neglected. Man must eat to live, and to fight, and as most of the peoples of Europe are either fighting or making instruments of destruction, the problem of supplying food to all is one which is hard to solve.

For many years Britain neglected agriculture, relying on imports for cheaper food than could be grown there. Now, however, Britain must feed herself to a greater extent than perhaps ever before and thus must be taught how to do this more or less effectively. To aid in this attempt a new scientific society was formed which, in addition to the nutritional thought centered in the Biochemical and Physiological Societies and the Nutrition Panel of the Society of Chemical Industry, embraces within its scope agriculture, clinical study, practical dietetics and sociological problems.

War has awakened a new spirit in men of science who recognize that in the existing state of affairs the result of their labors should be more practical and be used as they should be used in the interests of humanity. For example, the problem of feeding the people is vital to the country and doing something in this direction at once is paramount in the minds of those responsible for the establishment of this society. It is a practical effort to employ nutritional knowledge accumulated through the years for the welfare of the community at large. Malnutrition is prevalent everywhere and should be cause for deep shame and humiliation to civilized peoples. For this unhappy and extraordinary state of things, the man of science must bear some of the blame on account of his attitude of somewhat lofty aloofness from the common sense outlook. It seems that it would be for the good of all that science and statecraft should march together.

Suicide and War

It is a statistical paradox that suicide, in times of war, is actually found to become more rare than in peace times. Not only various national figures, but the records of the Metropolitan Life Insurance Company as well, present the evidence.

The death rate from suicide among the Company's policy holders in 1942 was practically the same in 1941, and, with one exception, the lowest on record. This low rate is attributable largely to the psychological effect of the war, although increased incomes have contributed a share.

A similar low level of suicide mortality is observed in England, where the rate fell consecutively from year to year between 1939 and 1941, and where the 1941 suicide rate among males was approximately fifteen percent below that of 1939. The number of suicides in London showed no marked change in 1940 from the two preceding years, a remarkable fact in view of the enormous strain on London's population by the *Blitz-*

krieg bombing of 1940. Reports of English psychiatrists emphasize the comparatively low rate of acute psychosis in English cities subjected to air warfare. The recent German figures likewise show a fall of thirty percent in the suicide rate from 1939 to 1941.

This decline in suicide during wartime has been observed in practically every country at war, and even neutral nations neighboring on the belligerent countries share in the phenomenon. The Metropolitan tries to explain this decrease. A national calamity, according to them, acts as a uniting force. The needs of the country become of paramount importance, and the petty interests and difficulties of the individual tend to be forgotten in the urgent desire to aid the nation in a time of crisis. Many sensitive individuals whose lives seem to lack purpose become absorbed in rallying to the defense of their country. Men live for the present and worry less about the future, especially as new channels of activity are opened during the war. The demands of the military forces for material cause a sudden spurt in production and incomes increase. Thus, economic and psychological forces work together in the same direction for the benefit of the nation's state of mind.

Suicide, nevertheless, remains a major social and medical problem. In the United States, more than eighteen thousand persons every year put an end to their lives, and probably an additional one hundred thousand make unsuccessful attempts to kill themselves. It is often difficult to determine the motive behind suicide. Ill health, domestic troubles, financial difficulties, despondency over life in general, are the most frequent reasons given.

Carlos Finlay and Yellow Fever

Carlos Finlay has not received his due meed of honor for his discovery that yellow fever was transmitted to human beings by a species of mosquito, the female of the stegomyia calopus. In a book published in 1941, his son, Carlos E. Finlay, presents the facts of the case and a description of his father's pioneer work. Some years before the discoveries of Manson and Ross in malaria, worked out by Ross in India, Finlay had published his theory and pointed out the mosquito that was to blame. More than this, Finlay had suggested measures to prevent the spread of yellow fever which were adopted to stamp out the disease in Havana. It was his unabating zeal in promulgating his views that brought about the American Commission which investigated and elucidated the moot points of the theory and proved beyond peradventure of a doubt the rôle of the guilty mosquitoes in transmission of the disease.

Finlay was born in Cuba, in 1833; his father was a Scot and his mother a Frenchwoman. He was educated in France and received his medical education and training in the Jefferson Medical College, Philadelphia. It is said that while in Philadelphia, Dr. John Kearsley Mitchell, a pioneer of the microbic theory of disease, the great father of a yet greater son, influenced greatly the young Finlay who became a life long friend of the son, S. Weir Mitchell.

Finlay became a general practitioner in Havana and studied yellow fever intensively. He advocated the theory that the stegomyia calopus was the transmitter of yellow fever at the meeting of the International Sanitary Conference held in Washington in 1881. Finlay was made an honorary member of the Philadelphia College of Physicians, given the Legion of Honor by the French Government, and made a corresponding member of the Paris Academy of Medicine.

Finlay was a charming and lovable man, with an acute mind and possessed of remarkable powers of persistence. He was a great friend of Gorgas. He died in 1915 at the age of eighty-two and was accorded a state funeral.

Pep Pills and Stuka Tablets

It is frequently stated that war flyers are being drugged before their take-off. This is said especially of German Stuka divers, and the drugs used for this purpose have been named "Stuka tablets". The drugs used for this drugging—or doping—of war flyers are said to be ephedrine and benzedrine (amphetamine) and similar compounds, which raise blood pressure. This produces a sense of well-being which is important for flyers, and especially dive bombers, because the lowering of blood pressure is considered one of the most unpleasant and even dangerous conditions which threaten the dive bombers. However, so far no exact evidence has been given that the blood pressure of these flyers has actually been greatly lowered.

For some time pervitin was considered a miracle drug in Europe. It is chemically 1-phenyl 2-methyl-aminopropane, and is related to ephedrine, benzedrine and propadrine. The stimulating effect of the drugs was supposed to enable German soldiers to carry out daredevil enterprises. Recently, however, the attempt to combat fatigue with pep pills and stuka tablets alone has been abandoned as a failure, according to reports in *Deutsche medizinische Wochenschrift,* Berlin. The problem of fatigue is still considered important, but the belief in the supreme power of chemical drugs has been abandoned. Straub, the pharmacologist, in *Vierteljahrsschrift Schweizer Sanitätsoffiziere* pointed out that amphetamine and pervitin are indicated when a single special performance is wanted. There must, however, be a corresponding training and adequate nutrition. He considers these two drugs a necessity for motorized troops, as they increase the performance

and faculty of observation, while the monotony of driving and the loud noise tire the men and make them sleepy. He considers it difficult to imagine a long distance night flight without these two drugs.

Following four years of investigation at Stanford University, Maurice Tainter, professor of pharmacology, reported that "pep pills" containing only one ten-thousandth of an ounce of methyl-benzedrine would keep a man so stimulated and alert that sleep would be impossible for at least eighteen hours. A somewhat larger dose would prevent sleep for twenty-four hours, but this dose makes the man jittery and nervous. Methyl-benzedrine has been under investigation in Germany and Denmark, as well as here. It may be the chief constituent of the stuka tablets and pills administered to Hitler's tank crews. One point is clear, from the different reports, that drugs alone, without adequate nutrition and training, cannot spur soldiers to "superhuman" assignments for a longer time.

News Items

Personal.—Dr. Martin Silverberg, assistant in pathology, New York University College of Medicine, delivered the eleventh Walter M. Brickner Lecture at the Hospital for Joint Diseases, New York, February 26th. His subject was "The Influence of the Endocrine Glands on Growth and Ageing of the Skeleton".

Dr. William J. Robbins, director of the New York Botanical Gardens, delivered the fifth Harvey Society Lecture of the current series at the New York Academy of Medicine on February 18th. His subject was "Some Internal Factors Limiting Growth."

Colonel Albert W. Kenner of the U. S. Army Medical Corps has been promoted to the rank of brigadier general for his efficient work in North Africa.

Dr. Alfred Blalock, professor of surgery at Johns Hopkins University School of Medicine, delivered the tenth E. Starr Judd Lecture at the University of Minnesota Medical School, Minneapolis, on March 11th. His subject was "Traumatic Shock with Particular Reference to War Injuries".

Dr. Raymond Hussey, associate professor of medicine, Johns Hopkins University School of Medicine, has been appointed scientific director of the new Army Industrial Hygiene Laboratory at Johns Hopkins University School of Hygiene and Public Health. The laboratory will operate under the direction of the occupational hygiene branch of the preventive medicine division of the Office of the Surgeon General of the Army.

Colonel Fred W. Rankin, Medical Corps, U. S. Army, president of the American Medical Association, and Colonel Hugh Jackson Morgan, Medical Corps, U. S. Army, have been created temporary brigadier generals.

Dr. William C. Menninger, Topeka, Kansas, has been commissioned a lieutenant colonel in the U.S. Army Medical Corps and assigned to duty as consultant in psychiatry.

Dr. George Widmer Thorn, Hersey Professor of the theory and practice of physics, Harvard Medical School, gave the annual Alpha Omega Alpha lecture at a meeting of the Yale Chapter of Alpha Omega Alpha, held in the Brady Memorial Laboratory, Yale University, on February 11th. His subject was "Clinical Aspects of Disturbances in Sodium and Chloride Metabolism".

Dr. Harry Gold, of New York, delivered an address on the Management of Heart Failure at the New York Academy of Medicine on February 24th. This lecture was the fifth in a refresher lecture course on cardiovascular diseases being given under the joint auspices of the New York Academy of Medicine and the New York Heart Association.

Dr. Franz Alexander, director of the Institute for Psychoanalysis, Chicago, delivered, on February 25th, the eighth in the series of Lectures to the Laity, being given at the New York Academy of Medicine. His subject was Aggressiveness—Individual and Collective.

Dr. Eugene L. Opie, director of the department of pathology, Cornell University Medical College, New York, delivered the second Edwin R. Kretschmer Memorial Lecture of the Institute of Medicine of Chicago, on February 26th. His subject was "The Experimental Production of Leukemia and its Significance in Relation to the Human Disease".

Dr. Donald B. Tresidder has been elected president of Stanford University, succeeding Dr. Ray Lyman Wilbur who reached the retirement age in 1941.

Dr. William T. Wooton, of Hot Springs National Park, Ark., was named president-elect of the Southern Medical Association at its recent annual meeting in Richmond, Va.

Dr. George M. Caldwell, formerly resident physician at the Greenbrier Hotel, White Sulphur Springs, W. Va., has been commissioned a lieutenant in the U. S. Navy.

Dr. Ray Lyman Wilbur, chancellor of Stanford University, Calif., has been awarded the William Freeman Snow Medal for distinguished service to humanity by the American Social Hygiene Association. The medal was awarded to Dr. Wilbur "in recognition of the outstanding work he has done to protect American youth from the ravages of social disease."

Conrad A. Elvehjem, Ph.D., professor of biochemistry, University of Wisconsin, Madison, has been awarded the thirty-second Willard Gibbs Medal by the Chicago Section of the American Chemical Society. The medal will be presented formally to Dr. Elvehjem at a meeting of the Chicago Section on May 20th. Dr. Elvehjem was awarded the Gibbs medal for his studies involving pure or applied chemistry.

Dr. J. Burns Amberson, Jr., New York University College of Medicine, was reelected president of the New York Tuberculosis and Health Association at the annual meeting held recently in New York.

Dr. Donald D. Van Slyke, of the Rockefeller Institute for Medical Research, New York, has been elected an honorary member of the Royal Society of Sciences of Upsala, Sweden.

Harland G. Wood, Ph.D., research assistant in bacteriology at the Iowa State College of Agriculture and Mechanic Arts, was awarded the Eli Lilly and Company Research Award for 1942 for his contributions to bacterial physiology.

Lectures on Brain Tumors.—A series of lectures on brain tumors is being presented at the Philadelphia Psychiatric Hospital by Dr. Matthew T. Moore, a member of the staff. The first lecture was given on March 3d, and other lectures will be given on each succeeding Wednesday for ten weeks.

Urological Research Prize Not to be Awarded This Year.—Announcement is made by the Committee on Research of the American Urological Association that the annual meeting of the association, which was scheduled to be held in St. Louis, Mo., in June, has been cancelled. Consequently, the $500 research prize offered annually by the American Urological Association will not be awarded this year.

Copernicus Celebration.—At a meeting of the Section of Historical and Cultural Medicine of the New York Academy of Medicine, held Wednesday, March 10th, the program was devoted to a Copernicus Celebration, honoring the quadricentenary of the publication in 1543 of his treatise on the revolution of the planets around the sun. Edward Rosen, Ph.D., department of history, College of the City of New York, read a paper entitled "Nicholas Copernicus and the Birth of Modern Science (1543-1943)". The discussion was opened by William Stahl, Ph.D., department of classics, New York University. There was also an exhibition of books by and on Nicholas Copernicus.

Friday Afternoon Lectures.—During the month of April the following Friday Afternoon Lectures will be delivered at the New York Academy of Medicine:

April 2d: Postcholecystectomy syndrome, by Dr. Ralph Colp, clinical professor of surgery, College of Physicians and Surgeons, Columbia University.

April 9th: Phosphatase values in relation to bone diseases, by Dr. Henry L. Jaffe, director of laboratories, Hospital for Joint Diseases, New York.

April 16th: Value of roentgen therapy in inflammatory conditions, by Dr. Maurice Lenz, professor of clinical radiology, Columbia University.

Oliver Wendell Holmes' Paper on Puerperal Fever.—The centenary celebration of Oliver Wendell Holmes' paper on "The Contagiousness of Puerperal Fever" was held at the New York Academy of Medicine on Friday evening, February 19th. Dr. Arthur Freeborn Chace, president of the New York Academy of Medicine, delivered the address of welcome, and Dr. Richard N. Pierson, chairman of the Holmes Centenary Committee, presided. Dr. Reginald Fitz, of Boston, delivered an address on "My Doctor Holmes" and Dr. Benjamin P. Watson, director of the Sloane Hospital for Women, New York, delivered an address on Oliver Wendell Holmes—A Century's Vindication of His Work on Puerperal Fever".

Military Officers to be Trained at the Mayo Clinic.—Medical and dental officers of the Army, Navy, Public Health Service, and Air Forces are being assigned through the Surgeon General's Offices and the various service commands for training under the auspices of the Mayo Foundation for Medical Education and Research. These officers are assigned for periods of training varying from six to twelve weeks. The fields for which training is offered are anesthesiology, aviation medicine, general surgery and surgical specialties, internal medicine and medical specialties, physical medicine, roentgenology, and maxillofacial, neurological and thoracic surgery.

New York Rheumatism Association.—On January 22d, the New York Rheumatism Association was formally organized, with Dr. Russell L. Cecil as president, Dr. Martin H. Dawson, vice-president, and Dr. Edward F. Hartung, secretary-treasurer. The purpose of this organization is "to unite physicians in New York and environs who are interested in arthritis and rheumatic disorders, to improve the treatment of patients with arthritis, particularly those attending the arthritis clinics in Greater New York, and to stimulate research on these disorders."

Lectures on Child Psychotherapy.—The Association for the Advancement of Psychotherapy is giving a series of lectures on various aspects of child psychotherapy. The series opened on January 13th, with a lecture on juvenile delinquency and psychotherapy. On January 27th, the subject discussed was Children's reaction to the war and its psychotherapy; on February 10th, Adolescents in need of psychotherapy, and on February 24th, Mental hygiene in school and psychotherapy. Other subjects to be discussed are as follows: March 10th, the Nutritional basis of mental disorders in children; March 24th, Clinical psychotherapy of the child; April 14th, Preschool education and psychotherapy; April 28th, the Role of the family in the psychotherapy of the child. The last lecture will be given on May 5th and the subject will be Adult psychotherapy and child psychotherapy.

Symposium on Crime in Wartime.—At a meeting of the International Spanish Speaking Association of Physicians, to be held at the Pythian Temple, New York, on Friday evening, March 19th, a symposium on the "Crime Dilemma in Wartime" will be presented. The subject will be discussed as follows: from the viewpoint of the psychologist, by Dr. A. Le Grand, Montreal; the homosexologist, by Dr. W. G. Henry, of Cornell University; the sociologist, by Dr. J. Moreno, director of the Psychodramatic Institute; the jurist, by Hon. J. Pankin, judge of the Delinquency Court; the criminologist, by Dr. G. P. Branhum, director of Woodbourne Institute; the psychiatrist, by Dr. R. S. Banay, psychiatrist, Sing-Sing Prison; the neurologist, by Dr. J. Wilder, neurologist, Montefiore Hospital; the psychoanalyst, by Dr. B. Mittelmann, psychoanalyst, Post-Graduate Hospital. The guest of honor will be His Excellency the Minister of Panama, who will transmit to the president of the association, Dr. J. M. Gershberg, a letter from His Excellency the President of Panama, accepting the honorary presidency of the association. A reception will be held after the meeting in honor of the guests and lecturers at Dr. Gershberg's residence, 125 Riverside Drive.

Russian War Relief.—Announcement is made that Russian War Relief, since its inception in the fall of 1941, have raised, up to December 31, 1942, in contributions in cash, in kind, and in collectible pledges made during 1942 a total of $9,342,204. The report also stated that the total of relief goods shipped and in transit and purchase commitments as of December 31st was $5,224,000. Of this total, seventy-eight percent was for medical and surgical supplies, fifteen percent for clothing, knitgoods and blankets, six percent for foodstuffs and seeds, and one percent for miscellaneous other items. Approximately $3,000,000 of the 1942 funds was realized through participation in Community War Chests throughout the country.

DICKINSON (Dr. R. L.) RAISES THE DICKENS*

The Story of the Corset

LeGRAND KERR
Brooklyn, N. Y.

Dames of the early nineties still wore corsets. The severe purpose of this feminine equipment was indicated by its structure and its stricture. Strong, flat rods of steel were bound together with stout cloth or canvas and the adjustment was made by drawing stout cords together through sturdy brass eyelets until the desired figure was obtained. This viscera-crushing implement, by its constriction of the dame's midriff, propelled the breasts into space. This was highly desirable, because large breasts and a small waist were component parts of beauty. This would prove a handicap in these days of crowded subways, cheek-to-cheek dancing, and small apartments.

The wasp-like waist was commonly referred to as an "illusion" waist. To the refined gentry of the early nineties women did not have breasts; the word was tabooed. "Bust" was the correct usage. Bust developers were a part of the armamentarium of many women and bust creams the possession of all. The girl of the nineties used her bust cream as frequently and persistently as the modern woman uses her facial make-up, but of course not as publicly. Fifteen millions of dollars annually was the value of the domestic corset production in the United States.

The torture of the corset was not a phase in changing fashion or whim, it persisted for decades. What was the reason for its continuance? If we study the paintings of Tintoretto of the Venetian school (1518-94), of Pieter Brueghel (1569) or of Peter Paul Rubens (1577-1640) we note that their women were fat although uncorsetted. It is reasonable to assume that they were designed not alone for art's sake, but for the cabinets of royalty or more deliberately as aphrodisiacs for connoisseurs. To sell, they must please those who were the main customers; and these liked their women fat. To other artists, Titian's nudes meant little; to others, his indolent courtesans showed his obvious purpose.

Cranach and Hans Holbein of the German school painted their females fat and naked probably for a similar reason; men of their time liked them that way. Fouquet of the French school added to the current fat of his subjects, big breasts which hung down over the abdomen like a "Mansard" roof.

There are no evasions in Rubens' paintings of women. Of all those who emphasized the fleshiness of women, Rubens is the one who broached the subject without seductive intent, portraying the naked female as an organic fact. Look at his "Three Graces". Under the disguise of art, he did not follow the usual procedure of painting creatures of radiant fat. There is no false concentration on face, breast or thigh; no salacious poses, but just the portrayal of three overweight maidens. There they stand, sitting in judgment on other women, and probably lying intently about clothes they do not possess.

Why do the more modern paintings of women make them thinner and much more shapely? Is it because it makes them more attractive to men? Look over some of the advertisements of the middle eighteen hundreds; they give the answer. I quote from one: "Swelling, rounded and firm breasts make a woman attractive to men and excite their interest." Women have always dressed, and deported themselves in a manner to attract men and in particular to attract one man.

Even today, women overfat and over forty are being pulled into one end of a slenderizing harness and emerging at the other end sylphlike, sweaty and uncomfortable. Their greatest charm is invisible, therefore concealment is used. Man strives to overcome this, therefore the attraction centres upon the garment of concealment. It is the locked strongbox that attracts the thief.

The real fight against the corset was begun by Dr. Hugh Smith, whose abundance of words brought forth a paucity of results. He was zealous, persistent, realistic. In a volume entitled, *Letters to Married Women,* published in 1827, he was stalwart in his condemnation of the corset and, although he used much more extravagant language than later writers, the arguments against the corset were very similar to those used by the latter. One of his more prodigal statements claimed that "the corset is a slow and fashionable poison, which has laid many a lovely form, at an untimely hour, prostrate with the listless dead". But women apparently did not want to read that kind of palaver. So the gals just paid no attention to Dr. Smith and took another hitch in their corsets.

Fowler, the great phrenologist, tried his hand at the game in 1849 without marked success although for a time he created a stir. He wrote that "tight-lacing explains the fact that tight-lacers so easily get in love." In writing thus, he acknowledged the attractiveness of big breasts and small waists, which were the current fashion. "It is true," he continued in the same writing, "that tight-lacing kindles impure feelings at the same time that it renders their possessors weak-minded, so as to be the more easily led by temptation".

Thus the battle raged until 1874, when Louise M. Alcott took up the fight in a book entitled, *Eight Cousins.* This was another direct appeal to women and was aimed to deliver the gals from the bondage of the corset and restore to them the freedom of deep breathing and more comfort, neither of which they desired. While Alcott's effort flopped, the breasts did not: the corsets continued to hold them firm.

Smith, Fowler, Alcott and all of the smaller fry: why did they fail? They were psychologically wrong in their approach to the problem. All made the same mistakes. They appealed directly to the victims of the corset, who refused to consider themselves victims of anything except man's misunderstanding. Women have always pouted that they were misunderstood. They learned that from philandering husbands. Suggest to them that they are not misunderstood and they show their disapproval as plainly as the alley cat that arches its back and blows up its tail when disturbed. Women do not wish to be told what they must do. On the

*Read before the Society of the History of Medicine, Brooklyn, N. Y., October 9, 1942.

other hand, they will go to extremes if the motive offered them is captivating, or at times, if just plain agreeable. Man has always attracted woman. Women, by nature monogomistic, commonly make one man dominant in their lives.

Women in provincial times were homemakers. They excelled in cookery, made garments for the entire family, and even found time to help pull the plough and till the ground. And they loved it. After the first hard years of winning the land and fighting Indians, along came the "*oui, oui*", hand-kissing French, and presto, those provincial women became "queens". When that happened man was sunk. Ask any woman why she should be pampered; then watch her frown and murmur that she is of the weaker sex. Shades of Carrie Nation, Gertrude Ederle, Alice Marble and a host of others! Nearly any flapper can dance the average man ragged in one evening. Could man stand the physical torture of the corset or the exposure of his legs to winter's blast, with no more protection than that offered by the sheerest of rayon or silk, or a coat of paint which doesn't even hide their varicose veins?

Then came Robert L. Dickinson, a lecturer in the Long Island Medical College. He approached the subject in detail and with precision as to the medical facts. Thus early in his medical career he revealed those qualities which later made him a great teacher.

Dickinson briefly reviewed the history of the corset and its effect upon abortion and pulmonary hemorrhage in earlier centuries. He quoted Bouvier that "as soon as men were sufficiently elevated above the beast to admire the forms of women, women began to shape themselves to an ideal". The article was illustrated with eighteen drawings showing twisted viscera, compressed lungs, displacements and distortions. But the text was devoid of platitudes and preaching.

Dickinson's conclusions were that the maximum pressure as measured by the manometer was 1.625 pounds to the square inch and the total pressure of the corset varied between thirty and eighty pounds. The circumference of the waist was no criterion of tightness. The capacity for expansion was restricted one-fifth with the corset on.

The thoracic type of breathing was due to corset-wearing. The thoracic cavity was less affected than the abdominal. The abdominal wall was thinned and weakened. The liver suffered most of the pressure and was the organ most frequently displaced. The pelvic floor was bulged downward one-third of an inch.

At a meeting of the Brooklyn Pathological Society on April 28, 1887, Dickinson's paper was discussed by Dr. Eliza Mosher, who added to the condemnation of the corset but made some minor excuses for her sex wearing them. Dr. Eccles defended the corset, claiming that it added to the woman's comfort and he contributed this gem (?); "the more intelligent the women, the more they were corset-wearers". Dr. Jerome Walker enlarged upon the evils. Dr. William Anderson thought that if women were educated to despise the corset it would disappear. Of course it would, but how could you teach them to despise what men admired? I repeat my former statement. Dickinson made the correct psychological approach to the subject, through appeal to the men and not to the women. This Brooklyn doctor must be credited with starting a revolution among thousands of husbands, whose sympathetic reply to the wife complaining of an aching head and tortured muscles was commonly enough, "Well, what do you expect when you tie yourself in the middle like a bundle of wheat and look as though you ought to stand beside the casket of one departed as a memento of a fond memory. Get rid of that corset. Either loosen up or shut up."

Dr. Arabella Kenealy of England, following Dickinson's lead, published an article in 1904 on "The Curse of the Corset". Dr. Kenealy writes that some years previously a scientist (whom she does not name) experimented with tight-laced monkeys. The results of these experiments were startling. Monkeys gradually restricted were increasingly sickly for weeks and finally died. Others much more gradually restricted by the corset became more or less accustomed to the restriction but at the expense of their health and activity. They lost their appetites, moped about and developed internal disorders and lost weight. Finally they died from various causes attributed to the pressure and displacement. Monkeys subjected to immediate restriction died within a short time.

Dr. Kenealy continues that "dress has been given to woman to conceal her deficiencies". She comments that, "our women are frilled and chiffoned to the eyes, flounced and furbelowed to the heels. Their toupees and love-locks come home in a box." Speaking of the efforts of the monkeys to release themselves from the corset, she takes a sly slap at the women in this quotation. "Their efforts did credit to their intellectual perception and sagacity."

I make another choice quotation. "The average woman clothed as fashion clothes her, presents, I confess, an exterior pleasing to our artificial and acquired tastes; unclothed, alas, she is that to make the physiologist and the artist weep."

Apparently these little primates were more interested in their comfort than in their shape but not so their descendants, the woman.

And speaking of evolution, think what may happen if this present war continues for several years as has been predicted.

Two apes, released by the destruction of a Zoo, had travelled for days through Europe. Tired, dusty and depressed they sat upon a fallen tree to rest. The male recounted the day's journey.

"What terrifying scenes we have witnessed, darling! What chaos! What desolation! We have travelled for days and I have not seen a house standing, nothing remains but ruins, ruins, ruins. Even the forests are denuded. What a mess those human beings made of it."

Then spake his wife: "That reminds me, daddy, do you know that we have not seen a single human being in the past few weeks? Nothing but their skeletons and broken bodies; just think of it."

"I do not like to think of it" replied the big ape, "but it is a fact, and now that you have reminded me of it, we will have to start the whole damned thing over again."

Manufacturers becoming alarmed at the tempest raised by Dickinson added hose supporters to the corset and were compelled to expand the waist line from the current seventeen to eighteen inches standard of the nineties to what it is today. The present twenty-one inch waist line of a prominent actress is considered

phenomenal. In the early nineties, she would have been regarded as disgustingly fat. Catherine de Medici wished her ladies to have waists not more than thirteen inches.

And now, a parting word. Gentlemen, as you raise your hand to the fair lady's torso and feel something softer, more pliable than steel and whalebone and brass eyelets, raise your voice in praise of Dr. Kenealy of England and to our own Dr. Dickinson, who made all this possible.

Perchance we need another crusader like Dickinson, to regulate the dress and the figure of the current damsel. Many think that we do. If so, I trust that he will not make his appearance during my time. My present prognosis is, "condition satisfactory, she is in fine shape now".

462 Clinton Avenue

The Psychotic Patient and His Induction Into the Army

(*Continued from page* 164)

DR. ERWIN JAFFE: As a doctor employed on the Draft Board I know that patients who have been in jail, like the example cited by Dr. Liber, are quickly found out by the Board through its rapid methods of investigation and through its connections with other authorities. This is my only objection to our speaker's paper.

DR. EMIL A. GUTHEIL: As the president of this Association and as the chairman tonight, I am thankful to Dr. Liber for his splendid, instructive and original paper. I just wish to add a few words. In the field of war time psychiatric experiences the first World War has contributed to the elimination of certain common old superstitions and to the establishment of important new views with regard to mental diseases. The first World War did not, in the opinion of some investigators, create new mental diseases. It did, however, aggravate some well-known types of reaction. There was a tremendous increase in frequency of hysteria as an independent illness and of hysterical reactions accompanying organic disorders such as brain concussion and other traumata. Most of these casualties were caused simply by fear, the old *timor belli,* and the evasion of danger proved to be, psychologically speaking, their intrinsic aim. The smallest number of mental casualties appeared in the front lines. The largest number was found well behind the lines, among fresh soldiers and those about to return to the front. Prisoners of war of all belligerent armies were not affected. Some psychopaths benefited through the war, through its more primitive or more simplified way of living, through its adventures, the absence of responsibilities and the removal of troublesome familiy situations.

The keeping of psychopaths in the military service proved to be an exceedingly costly affair. The U. S. Government has, since the armistice in 1918, spent one billion dollars for compensations and for hospital care of nervous and mental casualties suffered by its fighting forces. The authorities are determined to eliminate the possibility of a recurrence of such conditions, and have called upon our profession to cooperate by rejecting all men who, in the course of pre-induction examinations, appear mentally unfit.

DR. LIBER: Many thanks to the speakers who discussed my paper, among whom we also had a lawyer and a medical specialist in speech defects, whose names were not announced. I regret that some of them left after their remarks. It is true that I failed to cover all the possible cases, but that would not have been feasible in one evening. Besides, I could speak only about those induction cases which I happened to meet since conscription was established, that is, within a year or so. I do not know as yet how I would solve the problems of the others. As to homosexualism and those afflicted with speech disorders, the private psychiatrist or mental hygienist is in a position to diagnose their cases easier than the hurried and official medical induction man, whom they may try to deceive. In a general way, I am inclined to accept for military service the conscripts with both these irregularities, provided their condition is not extreme or badly contagious by imitation and is not accompanied by a psychotic state. My patient who told me that he has been in jail may have lied to me as I implied in my talk, although this is unimportant. But is it not also conceivable that he might have been admitted to the Army without any investigation? Since when are authorities so perfect and show no leakage? One of our discussants objects to the induction of neurotics as a whole, but in his weakness for the anxiety neurotics he would not refuse them. He gives the example of one who, being afraid of a cellar, would, during an air raid in Europe, always stand up bravely on a roof and signal the arrival of danger. But suppose another pet anxiety sufferer—as frequently happens—would fear roofs or any exposed place and would feel safe in a cellar! What then? No, the Army should not be intentionally regarded as a sanatorium into which our patients are dumped, but that is no reason for denying that for some of our lighter cases it is a helpful, wholesome environment. And, please, do not forget that what I said was all from the angle of the civilian psychiatric practitioner which is somewhat different from that of the military doctor who faces the inducted man as a *fait accompli* with all his troubles and must deal with him as well as he can.

65 West Ninety-fifth Street

Book Reviews

Physical Therapy Year Book

The 1942 Year Book of Physical Therapy. Edited by Richard Kovács, M.D., professor and director of physical therapy, New York Polyclinic Medical School and Hospital. Chicago: The Year Book Publishers, Inc., 1942. Pp. 416. Price $3.00.

During the past year progress has been reported in physical therapy research and in actual clinical use by the English-speaking and Latin-American countries; because of this expansion the total absence of medical literature from the enemy countries and from the nations under their yoke has necessitated no essential change in the general arrangement of the 1942 Year Book. Among the newer methods of physical therapy, in the field of hypothermy further studies were made on the physiopathological effects of cold, and a new "refrigeration" method for amputating limbs with peripheral vascular disease has been developed. Local hypothermy has also found new application in gynecological and dermatological conditions. Artificial ultraviolet irradiation increased its scope of application for air steril-

ization; it is now being used not only in the operating room but also for the control of cross-infection in hospital wards. Ultraviolet lamps were for the first time accepted for disinfecting purposes by the Council on Physical Therapy, thus settling a controversy of long standing. Improvement and modification of electrosurgical apparatus were reported on. The use of faradic shock therapy has become a standard method of treating certain types of depressive mental conditions, and its apparent success in the treatment of delirium tremens has also been reported. Physical education, fitness and rehabilitation have received increased interest as part of the war effort. The rôle of spas in medical preparedness has been stressed from various sources. Concerted efforts are being made to organize the therapy of chronic arthritis and to apply physical methods consistently in the management of its various types. Definite progress has been made in the clinical evaluation of physical therapy in painful shoulder and low back conditions. In the early treatment of infantile paralysis the Kenny treatment has commanded dramatic interest; this method has evoked much comment and controversy and undoubtedly represents as much progress as did the abandonment of prolonged immobilization in fracture treatment some years ago. Physical treatment of peripheral nerve injuries and spastic paralysis and the use of electrical and other aids in their diagnosis and prognosis received extensive study. In addition to such advances comprehensive clinical studies are being made for standardizing and extending physical therapy methods in all departments of medicine.

Surgical Pathology

Surgical Pathology. By William Boyd, M.D., LL.D., M.R.C.P. (Edin.), F.R.C.P. (Lond.), professor of pathology, University of Toronto. Fifth edition, thoroughly revised, with 504 illustrations and sixteen colored plates. Philadelphia and London: W. B. Saunders Company, 1942. Pp. 843. Price $10.00.

Pathologists of the past obtained their knowledge largely from the postmorten room. Today, pathology is a living science concerned with living things affected by environment conditions. It furnishes a groundwork of knowledge which facilitates an early diagnosis in the living. This book, didactic in tone, fills such a need for scientific pathology in surgery. The clinical features of most of the subject matter are summarized so that the relation of pathology to symptomatology could be demonstrated. A great field of new subject matter has been added to bring this valuable treatise up-to-date. It is one of the most readable of texts on pathology.

Surgery of the Jaws

Traumatic Surgery of the Jaws. Including First-Aid Treatment. By Kurt H. Thoma, D.M.D., professor of oral surgery and Brackett professor of oral pathology, Harvard University. With 282 illustrations. St. Louis: The C. V. Mosby Company, 1942. Pp. 315. Price $6.00.

Those who are familiar with Thoma's massive volume of some pages on *Oral Surgery* may expect a thorough and comprehensive study of this more limited field. In this, no one will be disappointed, for the author has presented a text which will serve student, dentist and oral surgeon admirably. Many medical books these days are written with an eye to the needs of men serving in the Army or Navy, but not all of them achieve practicality. Thoma is a clinician of vast experience, and he has set down here the results of his labors in the special field of surgery of the jaws.

Before undertaking any corrective measure, he insists that a well-laid plan be followed, and only such variations are to be allowed as must be made during the operative procedure to insure both functional and cosmetic results in the shortest possible time. After first-aid treatment, the patient must be thoroughly examined, a diagnosis (including complications) must be established, and then the remedial procedure may be undertaken. Facial and oral wounds must be managed on surgical principles, and trauma to teeth must be studied so that these may be preserved, if at all possible. Various technical methods are described for reducing fractures of the upper and lower jaws and for holding them in line. Injuries to the condyle and mandibular joint are dealt with in a special chapter. Then deformities caused by "traumatic injuries", such as ankylosis, are discussed. These include arthroplasty and osteoarthrotomy which for most surgeons are difficult and uncertain in ultimate result.

The numerous illustrations are drawn on a broad, sweeping scale and give a graphic presentation of the exact conditions met with. Thoma says that all dentists should be ready, in these wartime days, to give immediate and efficient service to all wounds involving the jaws and adnexa.

Fatigue

Fatigue of Workers. Its Relation to Industrial Production. By Committee on Work in Industry of the National Research Council. New York: Reinhold Publishing Corporation, 330 West Forty-second St., 1941. Pp. 165. Price $2.50.

The committee on work and industry of the National Research Council crystallized some current notions on the relation between heat and high altitudes as indirect causes of illness, methods for worker's self-expression, labor unions, extra time allowances, and labor organizations, with special emphasis on the experience of the Western Electric researches on fatigue. It is a practical orientation of the current methods effective in improving industrial efficiency.

Chemical Warfare

Chemical Warfare. By Curt Wachtel, founder, Pharmacological Section of the Kaiser Wilhelm Institute; founder and former director, Institute of Industrial Hygiene and Professional Diseases. Brooklyn, N. Y.: Chemical Publishing Co., Inc., 1941. Pp. 312. Price $4.00.

This timely monograph on the annihilation of large numbers of the population by poisonous gases is not only of concern to the armed forces but to intelligent civilians. The author presents technical aspects of the problem confronted not only by chemists, physicians, and military experts but also by trained laymen. After a preliminary consideration of the nature of chemical warfare the author discusses the social and economic aspects of gas warfare, development of toxic gases, methods of testing their toxicity, forms of poisoning used in warfare and the relative destruction of the various gases and fumes produced, as well as the treatment available for civilian protection. The author supervised many installations for using toxic gases experimentally in Germany and so he is competent by training and experience to explain the present status for our benefit.

Critique

Scientific Publication In *Science* for March 8, 1929, Maynard M. Metcalf had some suggestive things to say, writing on Biological Publication in America. For one thing he thought it would be well if more comprehensive papers could be published and deplored "the present unfortunate trend towards brief and rapid publication in place of comprehensive monographic treatment." He thought editors erred by objecting to pictorial illustrations; he apparently believed one picture would save ten thousand words. He said "Verbal presentation is less vivid, less accurate, and less adequate than pictures for most descriptive phases of a subject. Give twenty competent artists a verbal description of a landscape, elaborate and accurate so far as it goes, and ask them to paint the landscape. The lack of agreement in the resulting pictures will be a fair index of the unsatisfactory character of verbal description without pictures in biological presentation." Yes, and let the twenty artists see and paint from the landscape and you will be surprised how much they will differ from one another too. Metcalf finally suggested that research publication should occur without profit to anyone. Obviously he did not favor the exorbitant prices scientific authors have to pay for reprints. If there was a profit in research publication Metcalf held the author, not his publisher, should collect it.

Education The late Everett Dean Martin defined education thus in his *Meaning of a Liberal Education*: "Something that will broaden the interests and sympathies of people regardless of their daily occupation—or along with it—to lift man's thought out of the monotony and drudgery which are the common lot, to free the mind from servitude and herd opinion, to train habits of judgment and of appreciation of value, to carry on the struggle for human excellence in our day and generation, to temper passion with vision, to dispel prejudices by better knowledge of self, to enlist all men, in the measure that they have capacity for it, in the achievement of civilization."A big order? It's the only way to a better world.

The Changing Family Back in 1929 Prof. W. F. Ogburn made an address of this title which was reviewed in *Commerce and Finance* for January 2d that year. Ogburn felt that the family was disintegrating; centrifugal forces were pulling it apart. It appeared that the economic, educational, recreational, and protective functions of the family were being transferred elsewhere. One out of every eleven married women was then working outside the home for pay, an increase of one hundred percent in thirty years. Between 1900 and 1920 the number of restaurant waiters increased three times and of restaurant owners four times as fast as the population. Bakery production increased sixty percent between 1914 and 1925, and between 1910 and 1920 delicatessen dealers increased three times as fast as the population. In 1850 only forty-five percent of young people between five and twenty years of age were attending school, while in 1920 the percentage was sixty-five. The average number of days spent in school per annum was on the increase and the schools were also taking youngsters from home at earlier ages. Since 1870 the number of parents had tripled, but the number of teachers had increased six times. In 1910 there were only half as many motion picture theatres in the country as in 1928, hence recreation was also going outside the home. Sports and public recreational facilities had developed enormously. The changed location of the home from farm and village to city had restricted play space and increased the need for public parks and playgrounds. Finally the State had strongly developed its function of protection, even protecting the family against itself. City living also discouraged matrimony. The family was going plumb to hell. Did it get there?

Capital Punishment Frank J. Smith was warden of San Quentin for three years. Then he quit. During that time approximately one thousand murders were committed in California, but only seventeen men mounted the thirteen steps to the gallows. That disgusted Smith who said that capital punishment could not be a deterrent when it was so strictly reserved for the few. He began to stump the State for repeal of the law. He said: "Capital punishment is meted out almost exclusively to the poor and friendless. The seventeen wretches who plunged through the trap during my regime were steeped in poverty. The rope is not for the rich." That was early in 1929. At that time the earnings of seventy percent of the heads of families with children to support were insufficient to maintain those actually dependent at the scale of living recommended by social agencies for dependent families, and the total family income, including that derived from lodgers and the work of mothers, was inadequate in forty-five percent of cases. That was prosperity for you. In New Zealand, however, even then, according to Paul H. Douglas' *Family Life of Today,* the State granted $2 a month per child beyond the second born to parents with incomes below $19.50 weekly. New Zealand was not alone; New South Wales also made such payments, and so did France. The payments were nothing to wire mother about but they pointed the way to better times.

Pituitary Twins The annual award of one thousand dollars made by the American Association for the Advancement of Science was won in 1928 by Dr. Oliver Kamm for his isolation of the socalled pituitary twins. Extract pitutrin had been known then for about twenty years. It was known also to raise the blood pressure, to ease the pain of childbirth and to control excessive water output by the body tissues. Kamm showed that the alpha hormone was alone responsible for aid in childbirth while the beta hormone worked on the blood pressure.

Old Age Is Curable That is what Dr. Boris Sokoloff is reported to have said in January 1929. It's just the glands. Old age is a disease like any other. Monkey glands would not do and Voronoff was off on the wrong track. Old age is just autointoxication. It is not necessary. It is curable. That's all, folks. THE CRITIC

MEDICAL RECORD

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MARCH 1943

Medicolegal Notes

Time Limit For Action Applied in Treatment of Compensation Case

A workmen's compensation claimant's cause of action against a physician for alleged malpractice in the treatment of a compensable injury accrued in March 1938. The claimant accepted an award of compensation from his employer in the following December for the ultimate disability resulting from both the injury and the alleged malpractice. In February 1940, the claimant brought an action for malpractice against the physician, more than six months after the awarding of compensation and more than one year after the accrual of the alleged cause of action for malpractice.

The New York Appellate Division, Fourth Department, held, Balsley vs. Severance, 26 N. Y. S. 2d 190, that under section 29 of the Workmen's Compensation Law, as amended by Laws of 1937, chapter 684, claimant's cause of action against the physician for alleged malpractice had become vested in the employer or the employer's insurance carrier, and defendant's motion to dismiss complaint was granted.

Although this question was an open one for some time after the 1937 amendment was enacted, the Appellate Division in this case followed the Court of Appeals decision in Matter of Parchefsky vs. Kroll Bros., Inc., 267 N. Y. 410, 98 A. L. R. 1387, where Judge Lehman said, page 418: "If he (the employer) elects to take compensation under the statute, including damages for the injury caused by the physician's negligence, the employer becomes subrogated to the employee's right of action against the physician."

While the Parchefsky decision preceded the 1938 amendment to section 29, the Appellate Division thinks that "the Legislature did not intend to disturb the principle which served as the basis of decision in that case, viz.: That 'the law does not permit a double satisfaction for a single injury,' and that 'after malpractice has aggravated the original injury, the subsequent disablement is due to concurrent causes inextricably intertwined' (267 N. Y. 418). Under this 1937 amendment, the employee is not required to elect between the two remedies; he may accept a compensation award and such acceptance does not affect his right to maintain his common-law action for damages against a negligent third person providing he commence his action against such other person 'not later than six months after the awarding of compensation and in any event before the expiration of one year from the date such action accrues.' His failure to commence such action within the time limited therefore operates as an assignment of the cause of action." The six months limitation, the court pointed out, does not apply to a compensation award where the aggravated disability, due to malpractice, has not been included.

Misbranding by Circular Accompanying Product

In a misbranding proceeding the main question was whether a circular, entitled "What is Arthritis", which accompanied the product, constituted misbranding under the Federal Food, Drug and Cosmetic Act. The owner of the product contended that the circulars constituted advertising and, therefore, did not constitute labeling within the meaning of the act. That contention, the court said, "assumed that printed matter (such as a circular) cannot constitute both advertising and labeling. Most labeling, if not all, is advertising. The term 'labeling' is defined in the Act as including all printed matter accompanying any article. Congress did not, and we cannot, exclude from the definition printed matter which constitutes advertising." The circular stated substantially that the product was a competent and beneficial treatment for arthritis. The libel charged that it was not, and, therefore, the circular was false and misleading. This was held to be a sufficient charge of misbranding. United States vs. Research Laboratories, Inc., Ninth Circuit Court of Appeals, 126 F. 2d 42.

Evidence of Value of Services

When a trial court added $105 to the jury's verdict in a personal injury case on the doctor's own evidence that his services were necessary and reasonably worth that amount, The Texas Court of Civil Appeals held, Bridwell vs. Bernard, 159 S. W. 2d 981, that the burden was on the plaintiff to have the amount determined as a fact by the jury. The evidence, being wholly expert or opinion testimony of the physician, did not establish it as an undisputed fact.

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**Article in the Southern Surgeon, May, 1941.*

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TRUTH OF THE MATTER

Economic Aspects of Malnutrition and Medical Care

T. SWANN HARDING
Falls Church, Va.

Sir William Beveridge recently presented to the British Government a ponderous report. In it he offered a general plan for social security to make complete provision against unemployment and for a universal complete health service; to simplify the entire system of workmen's compensation, establish endowments for families, protect the aged, blind, deaf, dumb, and helpless, and make such provision for all as is necessary against contingencies such as childbirth, marriage, and death.

The report involves the conception of minimum subsistence levels for all persons, employed or unemployed. In other words, everybody would start from that platform and then reach forward instead of starting, as now here and in Britain, from a platform of starvation, lack of medical care, poor housing, improper clothing, and insufficient education. To establish a similar plan here would require approximately nine billion dollars a year, or something like a tenth of our usual national income, though it would, of course, prevent the necessity for our disgraceful Community Chest and other such drives, and for our whole unnecessarily expensive and inefficient system of private charity.

If all the people in the United Kingdom were fed well, Sir John Orr estimates that would require one hundred twenty-four percent more fruit, eighty-seven percent more vegetables, eighty percent more milk, fifty-five percent more eggs, and thirty percent more meat than they ate before rationing came into effect. If our own people were properly fed, this would require four to eight percent more meat, poultry and fish, fifteen to twenty-five percent more eggs, thirty to forty percent more tomatoes and citrus fruits, seventy to eighty percent more milk and milk products, and one hundred twenty-five to one hundred fifty percent more green and yellow leafy vegetables. On the other hand, we would make enormous savings in the costs of medical care if all our people were properly and adequately fed all the time whether idle or at work.

We too rarely think of the costs of illness of which so large a part is attributable to malnutrition. On May 27, 1941, Brigadier General Lewis B. Hershey, then Deputy Selective Service Director, told the National Nutrition Conference for Defense that we should be nationally ashamed of the poor health of our army selectees. Out of the first million examined he said 380,000 proved physically unfit, one-third of these deficiencies being directly or indirectly caused by malnutrition.

On the other hand, family expenditures for medical care are extremely modest, according to joint *Consumer Purchases Studies* issued by the Departments of Agriculture and Labor (Agriculture's *Miscellaneous Publication* No. 402). Medical care takes about five percent of the net income of native white families at most income levels in small cities and villages, though in high-income classes this drops to three percent.

(Continued on page 182)

Through The Menstrual Years of Life-

THE frequency with which the menstrual life of so many women is marred by functional aberrations that pass the borderline of physiologic limits, emphasizes the importance of an effective tonic and regulator in the practicing physician's armamentarium.

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But, and this is significant, the dollar outlays jumped from a mere $50 per family among those with cash incomes between $400 and $749 yearly, to $106-$146 among those with annual incomes of $2,500-$2,999. Since it seems reasonable to suppose that higher-income families did not buy additional medical care for the fun of paying for it, it is also reasonable to assume that low-income families were able to purchase less such service than they actually needed.

The Technical Committee on Medical Care of the National Health Conference did say that $100 a year would buy good group medical care for an average family, but this certainly would not provide such care at ordinary individual fee schedules. Yet only families with incomes of $2,000 or above average $100 a year for medical care. Moreover, while nine-tenths of the families spend a little for medical care every year, some have to spend $200 or more annually.

Physicians get most of the money spent; dentists are much neglected by low-income groups. Hospital care stands next to doctors. The average family spends about $10 a year for drugs and medicine, at incomes up to $1,500, and $25 a year for those with higher incomes. Negro families rarely spend more than $50 a year on health regardless of income. Not a pretty picture.

On the other hand, the Federal Trade Commission on September 16, 1941, announced that in 1939 Americans spent a total of $444,383,846 for drugs and medicines, including drug grinding, surgical supplies and equipment, and orthopedic appliances. The consolidated sales of twenty-three large corporations studied gave them a profit of 24.7 percent on total capital, the range being from 1.2 to 55.1 percent. After deduction of all items listed as expenses, taxes, provision for uncollectible debts, and so on there remained a new profit from manufacturing and trading in this field of 16.9 cents per one dollar of sales.

Just what profit, if any, there should be in this field of necessary drugs, surgical instruments, and orthopedic appliances, is not a question to be discussed here. But illness is a natural hazard that can in part be prevented by proper nutrition and medical care at all times.

The Institute of Public Opinion announced December 28, 1941, that 24,000,000 man-days were lost per month from illness, 3,200,000 of them in war industries alone. It also stated that one-half our population apparently did not know that there was a direct connection between diet and health, though a huge proportion of people in poor health had poor diets. Meanwhile certain people were lamenting the 18,000,000 man-days supposedly lost via strikes in 1941.

In the *New York Times Magazine* for February 22, 1942, Michael M. Davis said that doctors and dentists of course could not seek out patients. Moreover, though the defective rate among draft selectees was high, it costs money to get fixed up. For every day's work lost by strikes three days are lost to industry through sickness. For every day's work lost because of industrial accidents and occupational diseases some fifteen days are lost because of nonindustrially caused accidents and illnesses.

Davis estimated that illnesses and accidents of all kinds cost the United States 350,000,000 working days a year. This was equivalent to the loss of the work of

(*Continued on page* 184)

PASADYNE

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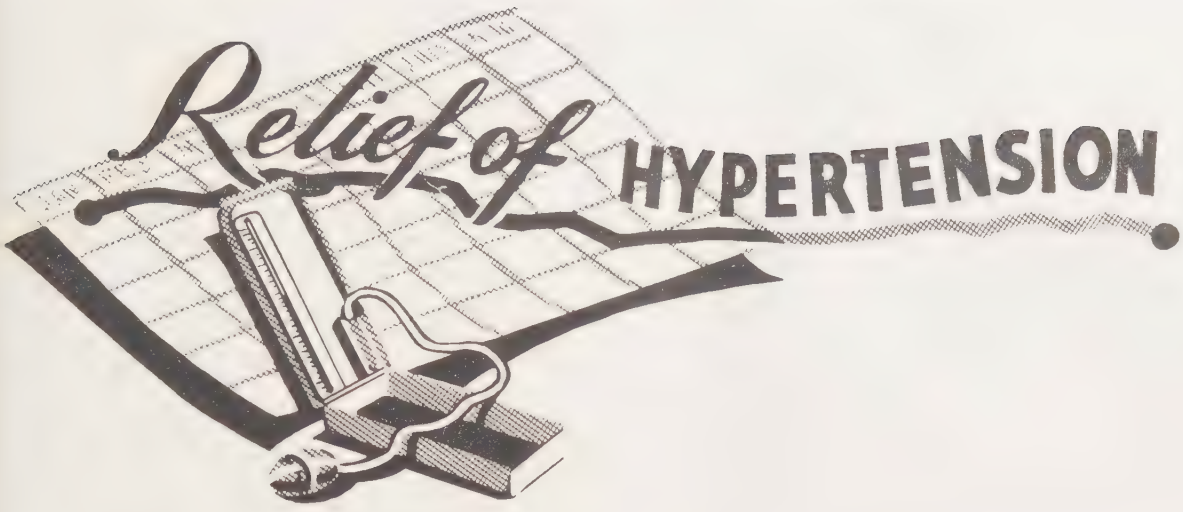

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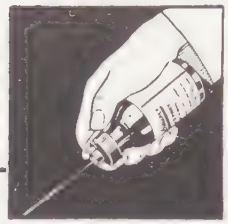

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a million men. According to Dr. Parran even a ten percent reduction in efficiency at war work would at that time have built twelve cantonments of average size, five battleships, and 16,407 combat tanks. These are figures to consider seriously.

Take one kind of disease alone, mental illness, from which one percent of our people suffer in some form. The annual estimated cost of bed maintenance for these people is $230,865,000, to which must be added $18,178,000 to cover private care for the few for whom that can be afforded, and an additional estimated annual loss of earnings, making a grand total of $783,586,000 annually for mental disease. Dr. Rock Sleyster, then president of the American Medical Association, gave this estimate to the Association at St. Louis, May 16, 1939.

He continued that the complexities of modern life evidently were unbalancing men's minds, thereupon they lost private initiative and turned to government for relief. But, he felt, people should be held responsible for their own illnesses and senility. For governmental spending on medical care breaks down the character of our people. They must learn to battle for themselves against the hazards of illness and old age if we are to remain a nation of free men and escape dictatorship. Evidently Sir William Beveridge thinks differently.

Take the common cold alone as an instance. In the *Journal of the American Medical Association* for March 29, 1941, we learn that 92.1 percent of the absences caused by sickness among 2,200 public utility workers during five years, were attributable to respiratory diseases—colds, pharyngitis, tonsillitis, etc. The United States Public Health Service has said that each of 42,000,000 gainfully employed in this country loses an average of two and one-fifth days annually from work because of the common cold.

Adding all costs—loss of income due to absence from work, cost of drugs and treatments, and loss to employers—the common cold costs us about $800,000,000 a year. Possibly half of this loss could be prevented by proper nutrition, health advice, and preventive medical care. Some more could be prevented by proper medical care of those ill with colds to forestall the development of worse sequelæ and complications.

The cold is our No. 1 ailment. The Institute of Public Opinion reported on April 13, 1941, that during the past winter more than fifty million adults had colds and more than twenty million had what was diagnosed as influenza. The estimates included no one under twenty-one and the total number afflicted was eighty-four mil-

(*Continued on page* 186)

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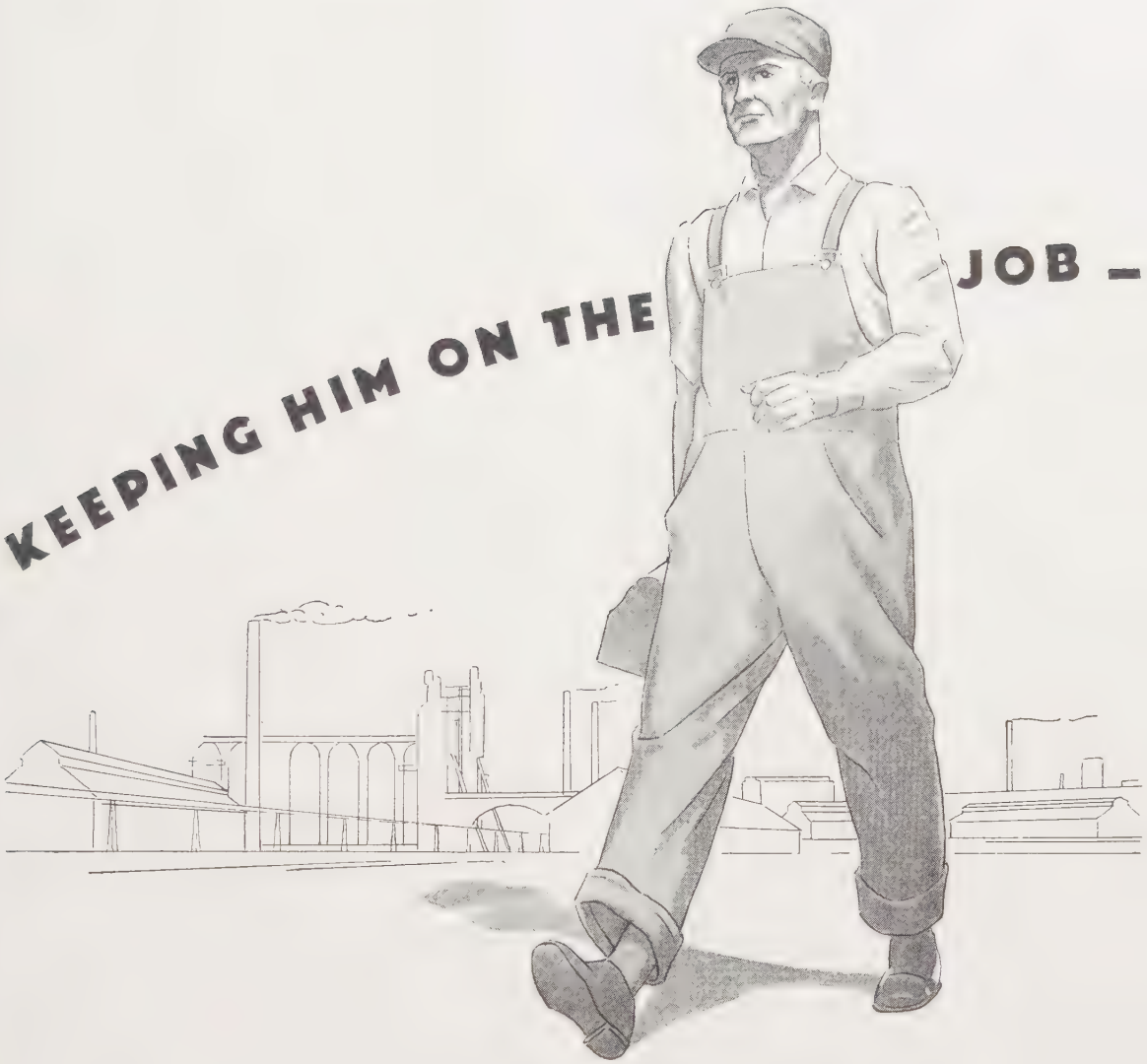

Hemorrhoids rank comparatively high among the causes of lost "man hours." Today, more than ever, this should be a matter of concern to physicians.

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lion, accounting for a loss of at least fifty-nine million work days.

However, and again this was significant, those on higher incomes had fewer colds. Of those earning a thousand or less a year sixty-seven percent contracted colds, but only sixty-one percent of those on incomes of $2,500 and over. Over half the people thought that diet affected the incidence of colds. This was especially true of women and all of those in the income class of $2,500 or over.

On November 23d the same year the Institute reported that there were colds in one-third of American homes on a specific date of survey, meaning that one person in seven, or eighteen million all told had colds. The National Manufacturers' Association estimates that colds cost us a cool one and a half billion dollars a year. They cause one-fourth of all absences from school. While the exact cause and cure of colds remain unknown, proper nutrition and medical care can do much to mitigate this evil.

A general social security plan, including full medical care for all, might well be worth nine billion dollars a year to this country. If we are in our right minds after the war we shall operate both our industrial and our agricultural plants at full capacity and full employment all the time, and learn how to distribute the results to all who need them. That means that our national income should average at least one hundred ten billion dollars a year, maybe more. We could well afford to lop ten percent off that regularly to give all citizens the basic living standard the Beveridge report contemplates for the British before we let anyone have luxuries.

GRANITE GABLES

Medical Problems of the War

How American medicine has met many challenging problems imposed by this global war was described by Albert Q. Maisel, war correspondent and author of "Miracles of Military Medicine," at a banquet for employees of Ciba Pharmaceutical Products, Inc., celebrating the presentation of the Army-Navy "E" to the company. Maisel holds that American medical men now serving on many fronts are constantly developing new techniques and improving those used by their comrades-in-arms of the United Nations. After the war these techniques will be adjusted to civilian practice.

Other speakers at the banquet included Brig. Gen. S. U. Marietta, commandant of Walter Reed Hospital; Rear Admiral Charles M. Oman, commandant of the Harriman, N. Y., Rehabilitation Center; Colonel Harold W. Jones, librarian of the Army medical library; Pharmacist's Mate, first class, Edward Bykowski, severely wounded when his ship, the U.S.S. Vincennes, was sunk in the Battle of Savo Bay; and Wing Commander N. Timmerman, of the Royal Air Force.

Workmen's Compensation Practice

With 712 New York Sate physicians newly authorized during 1942 to practice in workmen's compensation cases, the number of New York State physicians so authorized is now 21,147, the State Labor Department reports. The New York City Compensation District has 14,550 such physicians, 557 of whom were newly authorized for compensation practice last year. During 1942 there were also 247 medical bureaus and laboratories licensed under the Workmen's Compensation Law.

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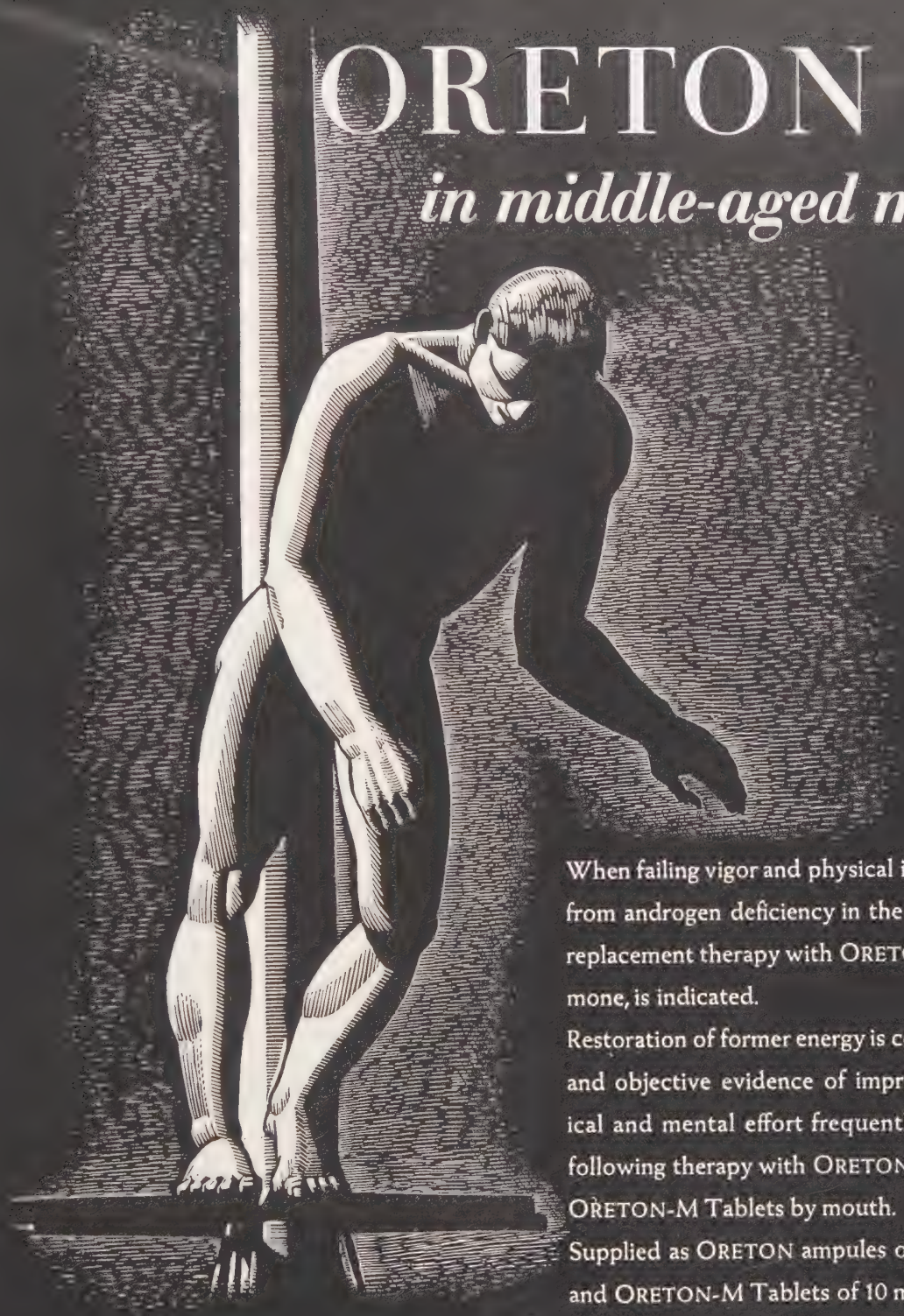

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Emergency Base Hospitals

The Medical Division of the U. S. Office of Civilian Defense, through its Regional Medical Officers and State Chiefs of Emergency Medical Service, has now made emergency provision for the establishment of a chain of Emergency Base Hospitals in the interior of all the coastal States. They will be activated only in the event of an enemy attack upon our coast which necessitates the evacuation of coastal hospitals. Each base hospital will be related to the casualty receiving hospital which has been evacuated and it is expected that the staff will be recruited largely from the parent institution.

In order to meet a sudden and unexpected crisis without delay, arrangements have been completed with State authorities for the prompt taking over of appropriate institutions in the interior of the State for this purpose and with local military establishments for the transportation of casualties and other hospitalized persons along appropriate lines of evacuation.

More than 150 hospitals in the coastal cities are in the process of organizing small affiliated units of physicians and surgeons, which will be prepared to staff the Emergency Base Hospitals if they should be needed. These units are composed of the older members of the staff and those with physical disabilities which render them ineligible for military service, and of women physicians.

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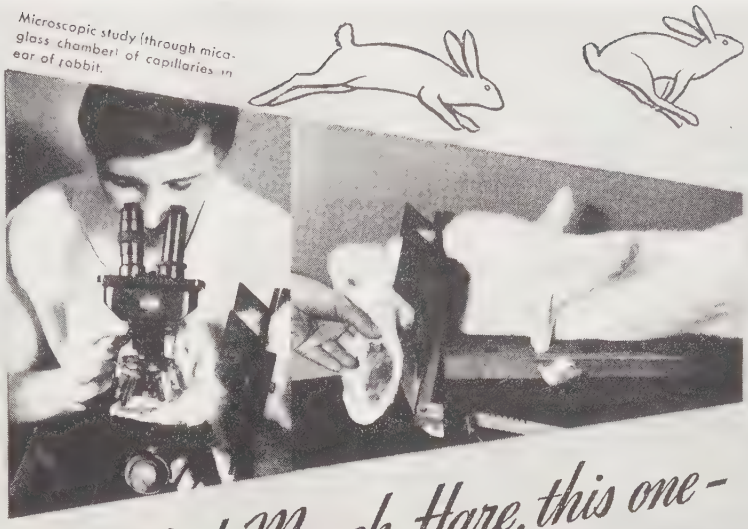
Tropical Medicine Foundation

The annual meeting of the American Foundation for Tropical Medicine was held in New York on January 19th. Guest speakers at the dinner which followed the meeting were Major General James C. Magee, Surgeon General, U. S. Army; Captain Erik G. Hakansson, of the Bureau of Medicine and Surgery, United States Navy; Captain Rolla E. Dyer, director of the National Institute of Health, Bethesda, Md., and Mr. Clarence J. Stiker, a representative of the State Department.

Plans submitted by the Executive Committee of the Foundation to secure $100,000 in gifts to provide for expansion of activities in the current year were approved. The lines of activity will be along those originally established for the Foundation, as follows: Support of graduate departments in tropical medicine at American medical schools; grants for fellowships in tropical medicine; financial aid for exchange of faculty; support of technical journals in the field, and support of research by grants in aid.

The executive director, Dr. J. A. Curran, president and dean of the Long Island College of Medicine, presented a report on the activities of the Foundation for the previous year. The following officers were elected: president, Lieutenant Colonel Thomas T. Mackie; vice-president, Dr. Willard C. Rappleye; treasurer, Mr. W. W. Lancaster, and secretary, Mr. Alfred R. Crawford. A medical committee was appointed, consisting of the following members: Colonel Charles F. Craig; Dr. Ernest Carroll Faust; Lieutenant Colonel Thomas T. Mackie; Dr. Henry E. Meleney; Dr. Alfred C. Reed; Dr. George C. Shattuck, and Colonel Joseph F. Siler. The Foundation, established by the American Academy of Tropical Medicine, was incorporated in New York State in 1940.



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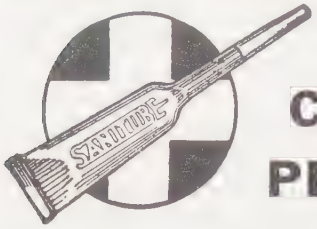

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Since 1920 Dr. Guild has specialized in internal medicine, devoting special attention to diseases due to allergy, and has maintained a consultant practice in problems of dermatology complicated by allergy. His researches include a study of skin disease of small animals and problems of human skin irritations due to soap. He is a member of several scientific societies, including the Society for the Study of Asthma and Allied Conditions, and is secretary of the Boston Allergy Round Table.

Major Gordon Home on Leave

Major Samuel M. Gordon, of the Chemical Warfare Division, U. S. Army, formerly vice-president of Endo Products, Inc., has returned to New York on a thirty-day furlough. Major Gordon, who has spent the past nine months in Panama on an official mission, will devote a part of his furlough to formulating plans for an extended research program at Endo for 1943. In addition, he is in charge of expediting increased production on government contracts now held by Endo Products, Inc.

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Health of Resident Staff in a Tuberculosis Hospital

The health of doctors living in hospitals is an important matter and deserves careful consideration, says Dr. Reginald Fitz (*J.A.M.A.* Sept. 27, 1942). Each medical student on graduation from his medical school should receive a card giving a complete report of his tuberculin test and roentgen examinations. Each hospital should make a rule to continue with this record by requiring chest films of its interns at six-month intervals. Large hospitals dealing with vast numbers of patients should go even further. They should require their interns and residents to have chest films at three-month intervals. If a rule of this sort were made general, tuberculosis in the resident staff would be recognized more quickly than it is at present, and unnecessary loss of time spent in treatment would be saved.

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Tuberculosis in Wartime

The Medical Research Council Special Report Series No. 246 consists of the Report of the Committee on Tuberculosis in Wartime. At the request of the Ministry of Health, the Medical Research Council in the autumn of 1941, appointed this Committee, as it seemed likely that the increase in tuberculosis mortality, which had become evident, would increase unless steps were taken to deal with the factors involved and limit the spread of infection. The Committee's survey of the situation up to the early part of 1942 shows that all age groups are involved to some extent in the increased mortality. Details of the survey, with a summary of the Committee's findings, are given in Special Report Series No. 246, which is on sale at the office of British Information Services, 30 Rockefeller Plaza, New York, N. Y.; price, twenty-five cents.

Medical Books for Russia

American medical and surgical textbooks sent to the Soviet Union by hundreds of American medical men and students through Russian War Relief, are helping to prepare new doctors for work with the Red Army and among Russia's forty million evacuees from invaded territory, it was revealed in letters sent to Russian War Relief by students in the First Kharkov Medical Institute.

The Kharkov Institute, one of the largest medical schools in the world, was moved to Chkalov when the Nazis occupied Kharkov. Classes were in full swing within a week after the faculty and student body left Kharkov. A letter written in painstaking English and signed by six first year students said that "our Institute, in spite of war conditions, is preparing many physicians for the front and the rear and we work hard at it." "We students thank you for the books which you have sent us," the note concluded.

Russian War Relief, 11 East Thirty-Fifth Street, New York, N. Y., is seeking all kinds of up-to-date medical textbooks for Soviet medical students and for the Central Medical Library, in Moscow, which is used by both military and civilian doctors.

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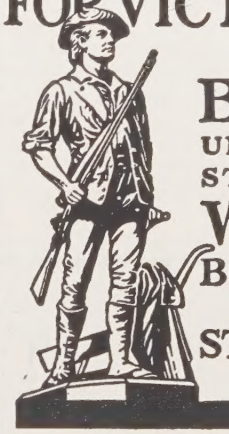

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